PHASE I SITE HYDROGEOLOGIC INVESTIGATION AT THE ENTERPRISE AVENUE LANDFILL

SECOND REPORT OF HYDROGEOLOGIC RESULTS

Prepared for

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PROFESSIONAL

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1.0 INTRODUCTION

This report incorporates recent hydrogeological data collected by Roy F. Weston, Inc. (WESTON_®) at the Enterprise Avenue Landfill from 12 April 1994 to 10 June 1994 which was not included in the first WESTON Phase I Hydrogeological Investigation Report dated 29 April 1994 (Phase I - 29 April 1994). Section 2 (Methodology) of this report discusses the groundwater elevation data and groundwater sampling procedures. Section 3 (Results) of this report discussed the site hydrogeology, more specifically the direction of groundwater flow; and the quality of the groundwater in the shallow, intermediate, and deep water-bearing zones at the EAL. This report's conclusions are presented in Section 4.

This report is the second of three reports presenting the results of the Phase I hydrogeologic investigation. The third report, summarizing all of the data collected during this investigation, is expected to be completed at the end of July.

2.0 METHODOLOGY

2.1 GROUNDWATER ELEVATION MEASUREMENTS

Six rounds of groundwater level measurements were collected at the site with an electric water level probe. Complete water level data collection rounds, which included all 18 of the newly installed wells, the four existing wells, and the eight landfill piezometers installed as part of the geotechnical investigation, were taken on 6, 12, and 26 May 1994 and 10 June 1994. A round of water level measurements taken on 12 April 1994 did not include well triplet WM-5 due to airport access issues. Another round of water level measurements taken on 27 April 1994 did not include the four existing wells because of time constraints. Additional water level data will be collected during the months of June and July. Analysis of these data will be presented in the third report.

2.2 GROUNDWATER SAMPLING

Groundwater monitor well sampling was conducted between 2 and 5 May 1994. Groundwater samples were collected from the six well triplets installed between 18 January and 18 February 1994, and analyzed for the following parameters:

- Target Compound List (TCL)
 - Volatile organic compounds (VOCs)
 - Semi-volatile compounds/Base neutral acids (SVOCs)
 - Pesticides
 - Polychlorinated biphenyls (PCBs)
- Target Analyte List (TAL)
 - Metals
- Cyanide
- Total dissolved solids

A list of the TCL and TAL compounds and analytes is presented in Appendix A. WESTON followed the low-flow purging and sampling methods identified in Amendment No. 2 of Final Work Plan for the Hydrogeological and Geotechnical Investigation of February 1994 (Amendment No. 2). During well sampling, a 0.2- to 0.5-liter per minute (lpm) flow rate was generally maintained at each well location; however, rates up to 1.05 lpm were sometimes necessary to overcome head gradients.

Purging was performed using a decontaminated 2-inch Grundfos RediFlo pump controlled by a converter box, which was powered by a compatible generator. Water quality parameters were collected throughout the purging process using an inline flow-through cell equipped with temperature, specific conductivity, pH, and Eh instrumentation. Additional dissolved oxygen and turbidity readings were taken using separate field instruments. Groundwater samples were collected after water quality parameters stabilized. A groundwater sampling summary, showing the stabilized field measurements attained at the end of the low-flow purging, is presented in Appendix B.

Field instruments were calibrated each morning, and the calibration readings were recorded in a field book. Prior to use and between sampling locations, all non-dedicated sampling equipment was decontaminated according to specifications.

Groundwater samples were collected in laboratory containers prepared in accordance with United States Environmental Protection Agency (U.S. EPA) protocols. The type of

Table 2-1
Enterprise Avenue Landfill
Summary of Groundwater Sample Analyses - May 1994

Lab oratory Well Iden Batch Number ID Iden 9405L493 WM-1S 2-G 9405L493 WM-1M 2-G 9405L493 WM-1M 2-G 9405L493 WM-1D 2-G 9405L493 WM-2D 2-G 9405L499 WM-2D 2-G 9405L449 WM-2D 2-G 9405L449 WM-3D 2-G 9405L449 WM-3D 2-G 9405L449 WM-3D 2-G 9405L449 WM-4M 2-G 9405L449 WM-4M 2-G 9405L472 WM-4M 2-G 9405L472 WM-5M 2-G 9405L472 WM-5M 2-G 9405L472 WM-5M 2-G 9405L472 WM-5D 2-G 9405L472 WM-6M 2-G 9405L472 WM-6M 2-G 9405L472 WM-6M 2-G 9405L479 WM-6M 2-G						Analy	Analytical Parameter	ler		
WM-1S WM-1M WM-1D WM-2S WM-2S WM-2D WM-2D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D WM-6S WM-5D				Sample		TCL		TAL		
WM-1S WM-1M WM-1D WM-2S WM-2S WM-2D WM-2D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-3D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D	Identification	Date	Time	Type	VOC	BNA	P/PCB	Metals	CN	TDS
WM-1M WM-1D WM-2S WM-2S WM-2D WM-3S WM-3D WM-3D WM-3D WM-4S WM-4D WM-4D WM-4D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D	2-GW-WM-1S	05-May-94	1150	Routine	X	×	×	×	×	×
WM-1M WM-2S WM-2M WM-2D WM-3S WM-3S WM-3S WM-3D WM-4A WM-4A WM-4D WM-4D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D WM-6S WM-6S	2-GW-WM-1M	05-May-94	1150	Routine	X	×	×	×	×	×
WM-1D WM-2S WM-2B WM-2D WM-3S WM-3B WM-3B WM-3B WM-4B WM-4B WM-4B WM-4B WM-5S WM-5D WM-5D WM-5D WM-5D WM-5D WM-6S WM-6S	2-DP-WM-1M	05-May-94	1150	Duplicate	×	×	×	×	×	×
WM-2S WM-2M WM-3D WM-3S WM-3S WM-4S WM-4S WM-4D WM-4D WM-4D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D WM-6S WM-6S WM-6D	2-GW-WM-1D	05-May-94	1600	Routine	×	×	×	×	×	×
WM-2M WM-2D WM-3S WM-3M WM-4S WM-4S WM-4S WM-4D WM-4D WM-4D WM-5D WM-5D WM-5D WM-5D WM-5D WM-5D WM-6S WM-6M	2-GW-WM-2S	05-May-94	945	Routine	X	×	×	×	×	×
WM-2D WM-3S WM-3D WM-4S WM-4S WM-4D WM-4D WM-5D WM-5D WM-5D WM-5D WM-5D WM-6S WM-6M WM-6D	2-GW-WM-2M	02-May-94	1715	Routine	×	×	×	×	×	×
WM-3S WM-3M WM-3D WM-4S WM-4D WM-4D WM-5D WM-5D WM-5D WM-5D WM-5D WM-6S WM-6M WM-6D	2-GW-WM-2D	02-May-94	1615	Routine	×	×	×	×	×	×
WM-3M WM-3D WM-4S WM-4M WM-5S WM-5M WM-5D WM-5D WM-6S WM-6S WM-6S WM-6D	2-GW-WM-3S	02-May-94	1115	Routine	×	×	×	×	×	×
WM-3D WM-4S WM-4D WM-5S WM-5D WM-5D WM-5D WM-6S WM-6S WM-6S	2-GW-WM-3M	02-May-94	1055	Routine	×	×	×	×	×	×
WM-48 WM-4M WM-4D WM-5S WM-5M WM-5D WM-5D WM-6S WM-6S WM-6S	2-GW-WM-3D	02 - May - 94	1320	Routine *	×	×	×	×	×	×
WM-4M WM-4D WM-5S WM-5M WM-5D WM-6S WM-6S WM-6S	2-GW-WM-4S	03-May-94	1205	Routine	×	×	×	×	×	×
WM-4D WM-5S WM-5M WM-5D WM-6S WM-6S WM-6S	2-GW-WM-4M	03-May-94	1030	Routine	×	×	×	×	×	×
WM - 5S WM - 5M WM - 5D WM - 5D WM - 6S WM - 6S	2-GW-WM-4D	03-May-94	1000	Routine *	×	×	X	×	X	×
WM – 5M WM – 5D WM – 5D WM – 6S WM – 6M	2-GW-WM-5S	04-May-94	1110	Routine	×	×	×	×	×	×
WM-5D WM-5D WM-6S WM-6A	2-GW-WM-5M	04-May-94	1045	Routine	X	×	×	×	×	×
WM-5D WM-6S WM-6M	2-GW-WM-5D	04-May-94	1300	Routine	×	×	×	×	×	×
WM-68 WM-6M WM-6D	2-FB-WM-5D	04-May-94	825	Field Blank	×	×	×	×	×	×
WM-6M WM-6D	2-GW-WM-6S	04 - May - 94	1545	Routine	×	×	×	×	×	×
WM-6D	2-GW-WM-6M	03-May-94	1530	Routine	×	×	×	×	×	×
	2-GW-WM-6D	03-May-94	1510	Routine	X	×	×	×	×	×
	Trip Blank	02-May-94	21	Trip Blank	X	1				
9405L449 T	Trip Blank	03-May-94		Trip Blank	×			II)		
9405L472	Trip Blank	04 - May - 94	7	Trip Blank	X			P.		
9405L493 Ti	Trip Blank	05-May-94		Trip Blank	×					

Extra volume collected for matrix spike and matrix spike duplicate blanks.

Note: The MS/MSD sample collected at WM-4D was for cyanide only;

affother MS/MSD samples were collected at WM-3D.

TCL - Target Compound List

TAL - Target Analyte List

VOC - Volatile Organic Compounds

BNA - Base Neutral Acids

P/PCB - Pesticides and Polychlorinated bipherols

CN - Cyanide

TDS - Total Dissolved Solids

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sample container, volume required for analysis, and any required preservatives were the same as reported in the Phase I - 29 April 1994 report. At the request of U.S. EPA, representatives of the Pennsylvania Department of Environmental Resources (PA DER) collected split samples from wells WM-1M, WM-2S, WM-5M, and WM-6S. Samples for VOC analysis were collected separately. To assure sample uniformity, all other groundwater samples for organic analysis were first collected in Level 1 laboratory-prepared 2.5-liter amber containers. Samples for metal, cyanide, and total dissolved solids analysis were initially collected in Level 1 laboratory-prepared 1-gallon plastic containers. The samples were then split between WESTON and PA DER into individual sample containers.

Sample collection data identifying laboratory quality assurance and quality control (QA/QC) samples, including trip blanks, field blanks, duplicates, and matrix spike (MS) and matrix spike duplicate (MSD) blanks is presented in Table 2-1. One complete QA/QC sample set, with the exception of trip blanks, was collected as outlined in Amendment No. 2. Trip blanks were included in every shipment.

WESTON field personnel followed EPA chain-of-custody procedures to assure the integrity of all samples. Sample packaging and shipping were completed using the methods identified in Amendment No. 2.

Methods used for the laboratory analysis of groundwater for the previously specified parameters were the full TCL and TAL using the EPA Contract Laboratory Program (CLP) Superfund Analytical Methods for Low Concentration Water for Organic Analysis (10/92) and Low Concentration Water for Inorganic Analysis (10/91).

3.0 RESULTS

3.1 GROUNDWATER QUALITY

3.1.1 Shallow Water-bearing Zone

A summary of the water quality parameters collected from the shallow wells during the May 1994 groundwater sampling event (second round of sampling) is presented in Table 3-1. During the second round of sampling the pH of the groundwater collected from the shallow wells ranged from 4.52 units in WM-1S to 6.77 units in WM-3S. The Eh of the groundwater ranged from -68 millivolts (mV) in WM-2S to 358 mV in WM-1S. Specific

Table 3–1
Enterprise Avenue Landfill
Water Quality Parameters – May 1994

		Wa	ter Quality	Paramete	rs	
Well ID	Temp (C)	Specific Conductance (mS/cm)	pH (units)	Eh (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
WM-1S	18.1	188	4.52	358	5.1	
WM-2S	16.6	2040	6.52	-68	2.1	6.9
WM-3S	16.6	1956	6.77	-121	2.8	1
WM-4S	18.2	2020	6.44	-116	1.4	40.
WM-5S	13.2	1582	6.42	-94	2.3	59.
WM-6S	15.0	723	6.63	-123	1.2	3.
WM-1M	17.0	477	6.84	-128	2.2	14
WM-2M	17.5	903	6.67	-121	4.5	5.1
WM-3M	16.3	1442	6.52	-137	1.7	2.0
WM-4M	16.0	876	6.87	-123	1.6	l
WM-5M	14.7	803	7.19	-164	1.4	1 %
WM-6M	16.1	511	6.95	-108	0.8	4.03
WM-1D	15.1	311	6.95	10	2.2	>200
WM-2D	16.4	59	5.88	220	3.0	34
WM-3D	15.7	324	6.28	168	2.0	179
WM-4D	14.6	311	6.73	130	2.9	>200
WM-5D	13.9	332	8.23	-142	1.3	>200
WM-6D	14.4	510	6.51	93	2.4	32

C - Degrees Celsius.

mS/cm - Milliseimens/centimeter.

units - Standard pH units.

mV - Millivolts.

mg/L - Milligrams/Liter.

NTUs - National Turbidity Units.

>200 - Greater than instruments range.

conductivity ranged from 188 milliseimens/centimeter (mS/cm) in WM-1S to 2040 mS/cm in WM-2S. Dissolved oxygen ranged from 1.2 milligrams/liter (mg/L) in WM-6S to 5.1 mg/L in WM-1S. Turbidity ranged from 3.1 National Turbidity Units (NTUs) in WM-6S to 59.3 NTUs in WM-5S. The average groundwater temperature was 16.3 degrees celsius, which is 3.4 degrees warmer than the average temperature computed for the March 1994 sampling event (first round of sampling).

The results of the groundwater samples collected from the shallow wells during the second round of sampling are presented in Table 3-2. The results of the groundwater samples collected during the first round of sampling are also shown on this table. Chain-of-custody records are presented in Appendix C. The laboratory data summary reports are presented in Appendix D.

No volatile organic compounds (VOCs) were detected above the federal Maximum Contaminant Levels (MCLs) in samples collected from the shallow wells during the second round of sampling. VOCs were not detected in wells WM-1S, WM-4S, or WM-5S. Low levels of VOCs were detected in samples collected from wells WM-2S, WM-3S, and WM-6S. Fewer compounds were detected in a sample collected from WM-2S during the second round of sampling than during the first round of sampling. Carbon disulfide, ethylbenzene, and xylene were detected in WM-2S during the second round of sampling, whereas carbon disulfide, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, ethylbenzene, toluene, and xylene were detected during the first round of sampling of sampling. Of the three compounds that were detected in both rounds (carbon disulfide, ethylbenzene, and xylene) carbon disulfide was detected at a higher concentration during the second round of sampling (4 µg/L) than during the first round of sampling (0.5 µg/L) (estimated concentration). At WM-3S, in addition to xylene which was also detected in the first round of sampling, carbon disulfide was detected at an estimated concentration of 0.2 µg/L during the second round of sampling. Xylene was detected at 0.1 µg/L (estimated concentration). Carbon disulfide was also detected at 3 ug/L in a sample collected from WM-6S.

No semivolatile organics (SVOCs) were detected above federal MCLs in samples collected from the shallow wells. SVOCs were not detected in samples collected from wells WM-1S during either round of groundwater sampling. Phenol and 4-methylphenol were detected in a sample collected from WM-2S at 2 μ g/L (estimated concentration) and 24 μ g/L, respectively. These compounds were not detected during the first round of sampling. 4-methylphenol was detected in samples collected from WM-3S at 11 μ g/L and

Table 3-2

Enterprise Avenue Landfill

Summary of Organic and Inorganics Detected in Shallow Water-bearing Zone

March and May 1994

Votabilise Organic Compounds (ugl.)	Compounds (ugl.) Compounds (Well ID:	WM-1S March	WM-1S May	WM-2S March	WM -2S May	WM-3S March	WM-35 May	WM-4S March	WM-4S May	WM-5S March	WM-55 May		S WM-6S March
No.	omethine	Volatiles Organic Compounds	(µg/L)											
No.	State Stat	Acetone	!	1	1	1 1 1	1		!	1	111		1	1
1	Ide	Benzene		! ! !	1		1			1	1111		1	-
1.1	Continue	Bromodichloromethane	1			1 1		1	1	!		i		-
1.1	omethane	Carbon Disuffide	1	1	.5.3	•	111	2.3		1		i	1	
ne	1.1 1.1	Chlorobenzene	1	1	2	ŀ	1	1 1		1	1	1		'
1,	11	Chloroethane	1	1	1 1	111	1111	1			1	H	l,	
No.	betaces	Chloroform	.13	1	3	1 1	1	1	111	1		i	Ī.	
higher 31	beitzene	Dibromochloromethane	-	1	1 1 1	1 1	1	1		1	1:	i		
nne	Derizence	1,2-Dichlorobenzene	1	1	113	1		1		1 1	!!!		İ.	
1	State Stat	1,3-Dichlorobenzene	1 1	1 1	1 1	1		7 - 1		1 1 1	1	1	T.	
higher 31 2 31	State Stat	1,4-Dichlorobenzene	1	! ! !	.4.3	1	E	1 1		1		1		
thene	Organic Compounds (μg/L) Co	1,1-Dichloroethane	1	1	1111	1	1	1		1 1	!	1	T	
thene	Continue Compounds (Lg/L) Continue C	1,2-Dichloroethane	-	1		1 1 1	1	1 1		1	1	1	t	
thene	Continue	cis-1,2-Dichloroethene	-	1	1	1 1		1		1111	1	1	t	-
e	rocthane 2.1 2.2	trans-1,2-Dichloroethene	111	1	1 1	1 I 1		111		1111	1 1	1		
be Compounds (ag/L) ic Compou	rocthane5151	Ethylbenzene		1	.2.3	.2.		1		1		1	+	
is Compounds (Lg/L) is Compou	Organic Compounds (µg/L) Sample Compounds (µg	Toluene	.2.3	1 1	.53	1		1		1 1		1111	1	
be Compounds (ag/L) halate	Organic Compounds (µg/L) 3 2 2.1 1.1	1,1,1-Trichloroethane		1	-	1	1	1		1	1	1		1
ke Compounds (Leg'L.) halate	Organic Compounds (μg/L) cxyl)Phthalate 1.1 1.2 2.1 1.2 2.1 1.1 2.1 2.1 1.1 2.1 1.1 2.1	Vinyl Chloride	-	1		1		1 1	1 1 1	1	111	1	N 345	-
halate 1.1 2	Organic Compounds (μg/L) sxyl)Philmlate	Xyene			3	2	.2.1	11.		1		1		1
halate 11 21	axyl)Phthalate 11 21	Semivolatile Organic Compons	nds (µg/L)											
halate 21 27 27	and 21 -	Acenaphthene	1			1	1	1		1			-	
21	and 21	Bis(2-Ethylhexyl)Phthalate	1	1 1 1		1			!!!	2.1		2.1	-	!
24 11 6	and	Phenol		1 1 1	1	2.7		! !	!	1		1 1 1	-	
34 11 6	nd 24 11 6	2 - Chlorophenol	t !	1		1	1111	1	1	1		1		-
D) 24 11 6 C	11 6	2,4 - Dichlorophenol	1			1 1	1	1		1 +	1 1 1	1		
	少 .	4-Methylphenol			1	24	11	9	!	1		1		2.3
		Daretinidae (co.ft.)									-		1	
		restricts (ARL)				1		1				1	\neg	111

---- Not Detected Above the CRDL.
J - Estimated value detected below CRDL.
*Presence of elemental interference
| during analysis

20-Jun-94

Table 3-2
Enterprise Avenue Landfill
Summary of Organic and Inorganics Detected in Shallow Water-bearing Zone
March and May 1994

Well ID:	WM-1S March	WM-15 May	WM-2S March	WM-2S May	WM-3S March	WM-35 May	WM-4S March	WM-45 May	WM-5S March	WM-55 May	WM-6S March	WM-6S May
Metals (Total) (µg/L)												
Aliminim	917	1270	57.43	543.1	117.1	269	26.1 J	£ 9.99	75.9 J	104.3	57.43	34.2.1
Antimony		1.8.1		1	1111	1		1		3.1.1	1	
Arsenic	1	1	6.33	7.7	113	9.8	8.5 J	10.1	11.4	18	14.4	11.4
Barium	60.5 J	42	432	209	500	531	368	495	464	750	109 J	155
Berdlium	1	1		1		1	1		 	I	1	1
Cadmium	1.2.1	1 1	1	1		1	1		! ! !	1	-	1
Chromium	9.7 J	5.9.3	4.7.3	43.1	12.2	7.4.5	3.5.1	3.1.1	6.5 J	5.8.3	4.5 J	231
Cobalt	493	3.1.3	15.6 J	4.2.3	5.5 J	4.9.3	3.3 J	3.2.1	3.2.J	3.2.1	4.9 J	2.
Conner	3.7.3	8.8 J	3.0.1	3.0.1	5.5 J	2.13	2.03	1.8.1	2.0 J	2.5 J	3.5 J	1.9.1
Iron	843	376	63400	58400	56600	5180	83000	3690	00986	11200	29100	3210
Lead	1.2.1	8.5	!!!	1.6.1	2.4 J	1.9.1	1	1	1111	1	1	1
Manganese	315	154	10900	15100	1560	1280	14000	11900	7530	8540	2090	2340
Nickel	28.7 J	10.7.1	22.6 J	27.3	15.1 J	19.8 J	9.9 J	23.2	16.6	21.7	5.1 J	6.1.5
Selenium	1	1	1	1-11		1	3.2.3	1		i i	1111	1
Silver	1	1			1	1 1 1	!!!	1		1		
Thallium	1	1 1	111	1		1 1				1]
Vanadium	1.03	1.6.1	1.53	1.5.1	2.0 J	1.4.1	1.2.3	:	2.2.3	2.1.5	1.4.1	i
Zinc	178	36.4	196	20.4	35.8	37.3	24.1	19.7.1	28.3	13.1.1	24.9	22.6
Calcium	20800	18300	161000	174000	174000	170000	192000	19400	173000	173000	24800	32900
Magnesium	4230 J	3870	49600	64100	76100	74700	74500	76500	64800	65300	9520	12400
Potassium	3740 J	4480	7950	5350	13900	12900	5820	6920	4060 J	4690	28800	21400
Sodium	44703	3860	82800	81000	31000	28300	62600	72600	19000	20200	162000	72600
Mercury		1		1			l l	1		1 1		
Cyanide (ug/L)		1		1		1	:	1	1	1	1 1	
Total Dissolved Solids (me/L)	119	115	1020	1230	168	872	1060	1080	1050	1000	627	349

---- Not Detected Above the CRDL.
J - Estimated value detected below CRDL.
*Presence of elemental interference

during analysis

6 μg/L, during the first and second round of sampling, respectively. Bis(2-ethylhexyl) phthalate was also detected at low levels in a sample collected from WM-3S, and in samples collected from WM-4S and WM-5S. 4-methylphenol was detected in a sample collected from WM-6S at 6 μg/L during the second round of sampling. This compound was detected at 2 μg/L (estimated concentration) during the first round of sampling.

No pesticides or Polychlorinated Biphenyls (PCBs) were detected in samples collected from the shallow wells during either round of sampling.

Between fourteen and sixteen metal species were detected in samples collected from the shallow wells during the first round of sampling. All metal species detected in the shallow wells were below the federal MCL. The number and concentration of metal species detected in samples collected during the second round of sampling were all within the same order of magnitude of the values identified in samples collected from the first round of sampling.

In a sample collected from WM-1S antimony was not detected in the sample collected during the first round of sampling. Cadmium, detected during the first round of sampling. was not detected in the second round of sampling. In a sample collected from WM-2S, the concentrations of some metals species increased while others decreased. Lead was detected at a low concentration (1.6 µg/L estimated concentration) in a sample collected from WM-2S during the second round of sampling, however it was not detected during the first round of sampling. Most of the metals species detected in a sample collected from WM-3S slightly increased in concentration during the second round of sampling, however the concentration of iron decreased from 56,600 µg/L to 5180 µg/L. This significant decrease in iron concentration between the first and second round of sampling was also observed in samples collected from wells WM-4S, WM-5S, and WM-6S. In a sample collected from WM-4S, low levels of selenium and vanadium were detected during the first round of sampling, however they were not detected during the second round of sampling. In a sample collected from WM-5S, antimony was detected at 3.1 µg/L (estimated concentration) during the second round of sampling, but was not detected during the first round of sampling. In a sample collected from WM-6S vanadium was detected during the first round of sampling, but was not detected during the second round of sampling.

Cyanide was not detected in samples collected from the shallow wells in either round of sampling. Total dissolved solids (TDS) detected in samples collected from the second

round of sampling were within the same order of magnitude as TDS levels detected in samples collected during the first round of sampling. TDS ranged from 115 mg/L to 1,230 mg/L in samples collected from the shallow wells during the second round of sampling.

3.1.2 <u>Intermediate Water-bearing Zone</u>

Field measurements of water quality parameters collected from the intermediate wells during the May 1994 sampling event (second round of sampling) are presented in Table 3-1. During the second round of sampling the pH of the groundwater collected from the intermediate wells ranged from 6.52 units in WM-3M to 7.19 units in WM-5M. The Eh of the groundwater ranged from -108 mV in WM-6M to -164 mV in WM-5M. Specific conductivity ranged from 477 mS/cm in WM-1M to 1442 mS/cm in WM-3M. Dissolved oxygen ranged from 0.8 mg/L in WM-6M to 4.5 mg/L in WM-2M. Turbidity ranged from 2.6 NTUs in WM-3M to 14 NTUs in WM-1M. The average groundwater temperature was 16.3 degrees celsius, which is 2.5 degrees warmer than the average temperature computed for the March 1994 sampling event (first round of sampling).

The results of the groundwater samples collected from the intermediate wells during the second round of sampling are presented in Table 3-3. The results of the groundwater samples collected from the intermediate wells during the first round of sampling are also shown on this table for comparison between the two sampling rounds. Chain-of-custody records are presented in Appendix C. The laboratory data summary reports are presented in Appendix D.

During the second round of sampling the following compounds were detected in a sample collected from WM-1M at concentrations similar to those observed during the first round of sampling of groundwater sampling: benzene, chlorobenzene, chloroethane, 1,2 dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, trans-1,2-dichloroethene, toluene, and xylene. During the first round of sampling, benzene and 1,4-dichlorobenzene were detected at 32 μ g/L and 78 μ g/L, respectively. Both of these concentrations exceeded the federal MCLs of 5 μ g/L and 75 μ g/L, respectively. During the second round of sampling benzene was detected at 23 μ g/L, above the federal MCL, however 1,4-dichlorobenzene was detected at 51 μ g/L, below the federal MCL. Additional compounds detected in well WM-1M during the second round of sampling include the following: carbon disulfide (5 μ g/L) (estimated concentration), 1,1-dichloroethane (0.2 μ g/L) (estimated concentration). Vinyl

Table 3-3

Enterprise Avenue Landfill
Summary of Organic and Inorganics Detected in Intermediate Water-bearing Zone
March and May 1994

Well ID:	WM-1M March	WM-1M May	WM-2M March	WM-2M May	WM-3M March	WM-3M May	WM-4M March	WM-4M May	WM-SM March	WM-SM May	WM-6M March	WM-6M
Volatiles Organic Compounds (µg/L)												
Acetone	1	1 1		1 1	1	1	1-1-	1	1-1-	1 1 1		1
Benzene	32	23		1		1 1		1	1	1 1 1	1	1
Bromodichloromethane				1 1	1 1	1	1	1	1	1	1 1	1
Carbon Disulfide		1.5		1	1	i	1	1	.2.3	1	1-1-1	3.1
Chlorobenzene	300	310		1 1		1	!	1	1	111	1 2 1	1
Chloroethane	4	•	1 1	1		1	1	1	111	1	1 1 1	1
Chloroform	1		1 1	1	1	1	1	1	1	3.5	.2.J	1
Dibromochloromethane		1		:		1	1	1		1		
1,2-Dichlorobenzene	32	**	1 1	# - - -	111	ļ	1 1 1	1	1111	1 1		1
1,3-Dichlorobenzene	16	9.1		1	1	1 1 1	1	111	t	1111		1
1,4-Dichlorobenzene	78	21	1	1 1 1	1 1 1	1		1-1-1	1 1 1	1111		
1,1-Dichloroethane	2 1 5	2.3	1	i	titi	1	1	1				!
1,2-Dichloroethane	1	4 1 1	1	1	1	1		1		I I I	1	
cis-1,2-Dichloroethene	i	1	1	1	.43	.9		1	1	1	1	111
trans-1,2-Dichloroethene	2	-	2	1		1	1 1 1	1	1 1	1 1		11
Ethylbenzene	1	7.	1	1	1 1 1	1	1	1 1		1		1111
Toluene	2			1 1 1		rr.	1 1	1111	111	1 1 1	1	1
1,1,1-Trichloroethane	1 1	1	-				1 - 1	1	1	1	1 1	1
Vinyl Chloride	.83		1		2	2		1		1	1	1
Xylene	3	2				1-1-1		1	1	ŀ		i
Semivolatile Organic Compounds (µg/L)	ds (µg/L)											
Acenaphthene		1		1 1	1 1 1	1 1 1	-	1 1	1			5.1
Bis(2-Ethylhexyl)Phthalate	1	1	1	2.1	1111	92		111	1111	1	1111	1 1 1
Phenol	!	2.1	1			1	1111	1 1		1 1 1		1
2 - Chlorophenol	1 1	5.7	-	111	1 1 1		1 1	1 1 1		1		1
2,4 - Dichlorophenol	-				111	1		!	1	1 1 1		1
4-Methylphenol		I I	i i	1	1 1 1	1		.9.J				1
Pesticides (µg/L)		1		1	1	1				1	1	1
PCBs (us/L)			1	1	1	1						
Not Detected About the CDO!												

--- Not Detected Above the CRDL.
J - Estimated value detected below CRDL.
*Presence of elemental interference
during analysis

Enterprise Avenue Landfill
Summary of Organic and Inorganics Detected in Intermediate Water-bearing Zone
March and May 1994 Table 3-3

Well ID:	WM-1M March	WM-1M May	WM-2M March	WM-2M May	WM-3M March	WM –3M May	WM-4M March	WM-4M May	WM-SM March	WM-5M May	WM-6M March	WM6M May
Metals (Total) (µg/L)												
					11		10 5 1	1066	1401	1801	48.51	102.1
Aluminum	156.3	123.1	1433	E C.60	70.43		15.00	2	2000			
Antimony	!	1 1	1	1	4.5.1	: :						200
Arsenic	7.23	9.1	27.5	29.6	7.9 J	10.2	103	181	56.2	26.3	28.4	26.2
Racium	452	520	1360	1350	603	674	296	1120	669	705	382	410
Bardlinm		1	1		1	1	1	1		1	1	1
Delymining Ordering		1 1	111	1	1	!	111	1111		1	-	1
Cadmium	100	100	3.3.1	3.0	5.9 J	4.4.1	23.1	1	23 J	1	7.6 J	2.2.5
Chromium	100	136	921	8.7	2.9.1	3.6.1	8.1.3	156	3.4 J	2.8.1	2.53	3.1.1
Cobair	4.6.7		181	9.	211	29.1	13.1		1.6.1	1.2.1	2.9 J	1.5.5
Copper	4.33	2024	70400	7760	\$2300	2560	56800	5460	24600	2220	34700	3570
Iron	21000	3	COLC			1		1	111	1 1 1		1 1 1
Lead	2.0.7	1 2 2 2	1050	4000	608	789	177	131	332	295	789	758
Manganese	7730	200	1930	1001	711	14.1	10.2.1	15.7.1	4.4.3	£ 9'9	163 J	5.5.1
Nickel	3.9.1	123	133					1	111	1	1	1
Selenium	1111	1 1	11111	!						1		1
Silver	1	1	1 1 1	1 1 1		1						1
Thallium	1 1 5	1	1 1 1	1		1 1						
Vanadium	1.13	111	1.6.J	111	3.4 J	3.1	-	1 1			207	1071
Zinc	23.3	12.2 J	9.3 J	15.4.1	32.0	37.1	18.2 J	14.9.1	18.9 J	77	46.7	10.01
Calcium	39300	39400	88300	87200	107000	109000	73100	71700	39500	39000	20300	ONCC7
Magnesium	22500	23900	41700	43000	51500	23000	39000	39100	34600	34700	15800	16000
Potassium	3310.1	4140	4270 J	5220	7570	8160	6620	7640	5130	6670	2940.1	36.20
Sodium	67800	74100	18600	19900	21500	23200	21400	19400	20200	21500	23300	25200
Mercini		1	1 1 1	1	1111	1	t 1	1		1 1	1 1 1	1
Mercury											-	
Cyanide (ug/L)	1	1	1	1 1	1	1		1	1	I I		1
							907	44.0	336	085	126	210
Total Dissolved Solids (mg/L)	422	408	492	509	605	***	429	786	330	200	7117	

---- Not Detected Above the CRDL.
J - Estimated value detected below CRDL.
*Presence of elemental interference
during analysis

chloride was detected during the first round of sampling, but was not detected during the second round of sampling. In a sample collected from WM-3M during the first and second round of sampling, concentrations of cis-1,2-dichloroethene and vinyl chloride were similar to those detected during the first round of sampling. Vinyl chloride was detected in a sample collected from WM-3M at the federal MCL level of 2 μ g/L in both rounds. Low levels of chloroform and carbon disulfide were detected in a sample collected from WM-5M and WM-6M. VOCs were not detected in samples collected from WM-2M and WM-4M.

No SVOCs were detected above the federal MCLs in samples collected from the intermediate wells during the second round of sampling. SVOCs were not detected in samples collected from WM-5M. Acenaphthene was detected in a sample collected from WM-6M at 5 µg/L (estimated concentration). SVOCs detected in samples collected from WM-1M during the second round of sampling of sampling include phenol (2 µg/L estimated concentration), 2-chlorophenol (5 µg/L estimated concentration), and 2,4-dichlorophenol (1 µg/L estimated concentration). No SVOCs were detected in WM-1M during the first round of groundwater sampling. Bis(2-ethylhexyl)phthalate was detected in samples collected from WM-2M and WM-3M at 2 µg/L (estimated concentration) and 16 µg/L, respectively. Bis(2-ethylhexyl)phthalate was not detected in these two wells during the first round of sampling. 4-methylphenol was detected in a sample collected from WM-4M at 0.9 µg/L (estimated concentration). This compound was not detected in this well during the first round of sampling.

No pesticides or PCBs were detected in samples collected from the intermediate wells during the first or second round of sampling.

Between 13 and 15 metal species were detected in samples collected from the intermediate wells during the second round of sampling. Of these species only arsenic was detected at levels above the federal MCL in samples collected from WM-4M and WM-5M. The federal MCL for arsenic is 50 µg/L. In samples collected from WM-4M arsenic was detected at 103 µg/L and 131 µg/L during the first and second round of sampling, respectively. Arsenic was detected at 56.2 µg/L and 56.3 µg/L in samples collected from WM-5M, during the first and second round of sampling, respectively.

A sample collected from WM-1M indicated the presence of lead at a low concentration during the first round of sampling, however it was not detected during the second round of sampling. In a sample collected from WM-2M vanadium was detected during the first

round of sampling, but not detected during the second round of sampling. The concentration of iron decreased by one order of magnitude from 79,400 µg/L to 7,760 µg/L. This was also observed in wells WM-3M, WM-4M, WM-5M, and WM-6M. Antimony was detected in a sample collected from WM-3M at a low concentration during the first round of sampling but was not detected during the second round of sampling. In WM-4M and WM-5M chromium was detected at low concentrations during the first round of sampling but was not detected during the second round of sampling.

Cyanide was not detected in samples collected from the intermediate wells in either round of sampling. Total dissolved solids (TDS) measured in samples collected from the second round of sampling were within the same order of magnitude as TDS levels detected in samples collected during the first round of sampling. TDS ranged from 210 mg/L to 644 mg/L in samples collected from the intermediate wells during the second round of sampling.

3.1.3 <u>Deep Water-bearing Zone</u>

Field measurements of water quality parameters collected from the deep wells during the second round of sampling are presented in Table 3-1. During the second round of sampling the pH of the groundwater collected from the deep wells ranged from 5.88 units in WM-2D to 8.23 units in WM-5D. The Eh of the groundwater ranged from -142 mV in WM-5D to 220 mV in WM-2D. Specific conductivity ranged from 59 mS/cm in WM-2D to 510 mS/cm in WM-6D. Dissolved oxygen ranged from 1.3 mg/L in WM-5D to 3.0 mg/L in WM-2D. Turbidity ranged from 32 NTUs in WM-6D to >200 NTUs in WM-1D, WM-4D, and WM-5D. The average groundwater temperature was 15.0 degrees celsius, which is 1.3 degrees warmer than the average temperature computed for the March 1994 sampling event.

The results of the groundwater samples collected from the deep wells during the second round of sampling are presented in Table 3-4. The results of the groundwater samples collected from the deep well during the first round of sampling are also included in this table for comparison between the two rounds. The chain-of-custody records are presented in Appendix C. The laboratory data summary reports are presented in Appendix D.

No VOCs were detected above federal MCL levels in samples collected from deep wells during the second round of sampling. In a sample collected from WM-1D, bromodichloromethane was detected at 0.4 µg/L (estimated concentrations), similar to the

Table 3-4

Enterprise Avenue Landfill

Summary of Organic and Inorganics Detected in Deep Water-bearing Zone
March and May 1994

Section Compound	Well ID:	WM-1D March	WM-1D May	WM-2D March	WM-2D May	WM-3D March	WM-3D May	WM-4D March	WM-4D May	WM-5D March	WM-5D Mav	WM-6D March	09 ep
1	Volatiles Organic Compounds (µg/L)	(
State Stat	Acetone		1		1		1	1	1		35		
1	Benzene				1	1-1-1	1		1	211	1111		1
Second S	Bromodichloromethane	3.5		.13	.11		1 1	.23	143		1	1	!
Second component Second comp	Carbon Disulfide	1	1	-	1		1	111	.23		1	1	1
Marie Mari	Chlorobenzene		1		1		1	1	1		1	i	
S S S S S S S S S S	Chloroethane	1	i	1111	1		1		1111		1	ļi	1
Note that the contract contr	Chloroform	.6 J		1	1	3.3	1	1.0	1	.53	.53	4	
	Dibromochloromethane	1			1		1	1	23	1111	1		
beinzeite	1,2-Dichlorobenzene		i		1	1	1	1	1	1110	1 1	1	1
State	1,3-Dichlorobenzene	1	ł		1	1	111		1	1	1	1	1
State	1,4-Dichlorobenzene	111	1	!	1		I T	1111	1111	1	1		1
Signature	1,1 - Dichloroethane	-	1		111		1		1	1		1	
Octable	1,2-Dichloroethane	-	1	1	111	111	1		1	1	1	1	1,
1	cis-1,2-Dichloroethene	1 1	1 1 1	1	1		1111		1				1.
Organic Compounds (ug/L) Organic Compounds	trans-1,2-Dichloroethene		1	-	1		1	i i	1	-	1 1 1		
Organic Compounds (µVL) Organic Compounds (µV	Ethylbenzene		1	1	1	1	1	1 1	1				1.
Organic Compounds (µg/L) Organic Compounds (µg/L) Indicate	Toluene	11	1 1	!	1		1 1 1 1		1	1	1		1.
Organic Compounds (µg/L) Organic Compounds (µg/L) Syl)Phthalate	1,1,1-Trichloroethane		.9.5	.13	77:	.23	3.3		1	1			
Organic Compounds (µg/L) Syl)Phthalate	Vinyl Chloride		-	111	1	1 !!	1	1	1111		1	1	1.
Organic Compounds (µg/L). Styl)Phithalate 4.7 4.7 4.7	Xylene		1	1	1	1			1	1	1111	i	
13	Semivolatile Organic Compounds (µg	(T)											
1.1 4.1	Acenaphthene			1	1	1 - 1	1	!!!	1		1	1	١.
Dig	Bis(2-Ethylhexyl)Phthalate	-	T I	-	111	1 1 1	1 1	1	43			-	١.
phenol	Phenol	!	1	1	1		1		1	1	1 1	!	1
10d	2 - Chlorophenol	1	‡ † 1		1		1 1 1	1	1	1 1	3 3 1	1	١.
10	2,4 - Dichlorophenol				!		1		1 1		1 3 4	ļ	١.
1/2 (1/4)	4-Methylphenol		- - - -	1 1 1	1	1	1 1 1	1	1		1	i	1.
##			100000000000000000000000000000000000000										
	resticides (ug/L)		f I I		1		T L	-	1	1	1	1	
	PCBs (µg/L)												

⁻⁻⁻⁻ Not Defected Above the CRDL.
J - Estimated value detected below CRDL.
*Presence of elemental interference
during analysis

20-Jun-94

Enterprise Avenue Landfill Summary of Organic and Inorganics Detected in Deep Water-bearing Zone March and May 1994 Table 3-4

Well ID:	WM-1D March	WM-1D May	WM-2D March	WM-2D May	WM-3D March	WM-3D May	WM-4D March	WM-4D May	WM-5D March	WM-5D May	WM-6D March	WM-6D May
Metals (Total) (µg/L)												
Aluminum	90.1.3	0161	318	89.2.3	1230	1370	6380	817	1510	4480	400*	81.43
Autimonia		1	-	1	1	1	1	1		1		1 1
Antonio	201	1		1 1	1	1	111	1	2.9 J		3.5 J	1 1 1
Review	23.5.1	4.82	47.6 J	27.8	48.4 J	43.6	19'66	32	25.1 J	112	59.7.5	35
Bardlinm		i		1	2.6 J	1	5.2	1	1	2.1		1
Codmium		1	1	1		1			1	1 1	1 1	1
Chamina	511	3.4.1	5.53	1	11.7	8.8.1	19.5	195	18.5	33.4	7.4 J	2.4.3
Contourne	200	197	9.9 J	5.9.3	8.3.1	433	9.0.1	1.8.1	2.1.5	25.4 J	4.4.3	1831
County	5.51	8.7.1	17.4.3	8.3	33.9	1:11	80.7	19.5	9.8 J	76.4	4.7 J	8.6.3
Tron	286	518	420	129	1410	1080	5190	804	1110	6450	723	36.5
Lond	151	1.5.1	1.11	1.4.3	6.7	2.5	9.2	2.2	2.0 J	7.8	!!!	13.5
Monage	8 5 1	31.4	107	53.9	54.7	49.7	112	53.4	13.4.J	218	1720	5400
Nickel	3,9 J	731	12.8 J	13.1	193 J	12.6 J	33.6 J	16.1	8.9 J	52.9	9.6 J	, 12.2 J
Selenium	111	1		1 1		***		1 1	1 1 1	I I		1
Silver	1 1 1	1111		1		1	1		1 1 1	1	1	1 1
Thelling	1	1	1111	1	111	;		1	1	1		•
Venedium	47.73	12.9	2.9 J	111	18.7.1	8.7.1	24.0.1	1973	38.9 J	7.07	243 J	6.4.1
Zinc	49.8	51.4	72.6	99	64.9	58.2	261	683	22.4	230	29.2	20
Colcium	40100	27100	17800	12500	13600 .	14300	22900	18200	30000	74600	20400	46600
Moonesium	5160	\$660	2000	4950	4650 J	5000	5290	4040	2710 J	9669	16200	17000
Potassium	3540 J	3430	2740.3	2910	3020 J	4440	3750 J	3290	3940 J	5230	41103	3290
Sodium	22300	24300	24200	26000	34900	85700	37800	39100	32700	39600	31000	30000
Mercury	1	1		1	1	1	-		1	1	1111	1
Cyanide (ug/L)	1	1		1			1	1		1	-	1
Total Dissolved Solids (mg/L)	195	176	152	13.4	244	313	231	189	178	220	274	260

--- Not Detected Above the CRDL.
J - Estimated value detected below CRDL.
*Presence of elemental interference

during analysis

concentration observed during the first round of sampling. One additional compound, 1,1,1-trichloroethane, was detected in this well at 0.9 µg/L (estimated concentration). Toluene and chloroform, observed during the first round of sampling at low concentrations, were not observed during the second round of sampling. Concentrations of bromodichloromethane and 1,1,1-trichloromethane were detected in WM-2D at 0.1 µg/L (estimated concentration) which is the same as concentrations observed in this well during the first round of sampling. Chloroform was detected in WM-2D at a low concentration during the first round of sampling, but was not detected during the second round of sampling. In WM-3D the only compound detected was 1,1,1-trichloroethane at an estimated concentrations of 0.3 µg/L, similar to the concentration of this compound detected during the first round of sampling. Dibromochloromethane, which was detected in WM-3D during the first round of sampling, was not detected during the second round of sampling. In WM-4D, bromodichloromethane was detected at 0.4 µg/L (estimated concentration) during the second round of sampling which is similar to the concentration that was detected in the first round of sampling. Carbon disulfide and dibromochloromethane were detected during the second round of sampling but were not detected during the first round of sampling. Both of these compounds were detected at estimated concentration of 0.2 µg/L. Chloroform, which was detected at a low concentration during the first round of sampling, was not detected during the second round of sampling in this well. In WM-5D chloroform, present during the first round of sampling, was observed again during the second round of sampling at 0.5 µg/L (estimated concentrations). Acetone was detected in a sample collected from WM-5D at 35 µg/L. Acetone was not detected in the first round of sampling sample collected from WM-5D which suggests that the presence of this compound may be attributed to laboratory contamination. In sample collected from WM-6D, carbon disulfide was detected at 0.7 µg/L (estimated concentration). Carbon disulfide was not detected in the first round of sampling. Chloroform was detected in a sample during the first round of sampling, however it was not observed during the second round of sampling.

No SVOCs were detected above the federal MCLs in samples collected from the deep wells during the second round of sampling. SVOCs were not detected in samples collected from wells WM-1D, WM-3D, WM-5D, or WM-6D. Bis(2-ethylhexyl)phthalate was the only SVOC detected in WM-2D and WM-4D at 1 μ g/L and 4 μ g/L (estimated concentrations), respectively. Bis(2-ethylhexyl)phthalate was not observed in these wells during the first round of sampling.

No pesticides or PCBs were not detected in samples collected from the deep wells during either round of groundwater sampling.

Between 13 and 15 metal species were detected in samples collected from the deep wells during the second round of sampling. No metal species were detected above the federal MCL. Beryllium was detected at 5.2 µg/L (above the federal MCL of 4 µg/L) in a sample collected from WM-4D during the first round of sampling, however it was not detected during the second round of sampling of sampling. In samples collected WM-3D beryllium was also detected during the first round of sampling at 2.6 µg/L (estimated concentration), however it was not detected during the second round of sampling. In samples collected from wells WM-1D, WM-5D, and WM-6D, arsenic was detected at low concentrations during the first round of sampling, but was not detected during the second round of sampling. Cobalt was detected in WM-1D during the second round of sampling at 2.6 µg/L (estimated concentration), was not detected during the first round of sampling. A sample collected from WM-2D showed the presence of chromium at a low concentration during the first round of sampling, however it was not detected during the second round of sampling. In a sample collected from WM-6D lead was not detected during the first round of sampling, but was detected during the second round of sampling at 1.3 µg/L (estimated concentration).

Cyanide was not detected in samples collected from the deep wells in either round of sampling. Total dissolved solids (TDS) detected in samples collected from the second round of sampling were within the same order of magnitude as TDS levels detected in samples collected during the first round of sampling. TDS ranged from 134 mg/L to 313 mg/L in samples collected from the deep wells during the second round of sampling. The average groundwater temperature was 15.0 degrees celsius, which is 1.3 degrees warmer than the average temperature computed for the March 1994 sampling event.

4.0 CONCLUSIONS

4.1 SHALLOW WATER-BEARING ZONE

• Three VOCs and three SVOCs were detected at low concentrations in samples collected from the shallow wells. All compounds were detected at concentrations below federal MCLs.

 Between 14 and 16 metal species were detected in samples collected from the shallow wells. All metal species were detected at concentrations below the federal MCLs.

4.2 <u>INTERMEDIATE WATER-BEARING ZONE</u>

- Fifteen VOCs and six SVOCs were detected at low concentrations in samples collected from the intermediate wells. Benzene was the only compound detected above the federal MCL at 23 μg/L in well MW-1M. Benzene was also detected in MW-1M above the federal MCL during the first round of sampling. The federal MCL for benzene is 5 μg/L. 1,4-dichlorobenzene, which was detected above the federal MCL during the first round of sampling, was detected during the second round of sampling, but below the federal MCL.
- Between 13 and 15 metal species were detected in samples collected from the intermediate wells. Arsenic was detected in samples collected from wells WM-4M and WM-5M at concentrations slightly above the federal MCL.

4.3 **DEEP WATER-BEARING ZONE**

- Six VOCs and one SVOC were detected at low concentrations in samples
 collected from the deep wells. All compounds were detected at
 concentrations well below the federal MCLs.
- Between 13 and 15 metal species were detected in samples collected from the deep wells. No metals were detected above the federal MCL.

APPENDIX A

TCL AND TAL COMPOUND LIST

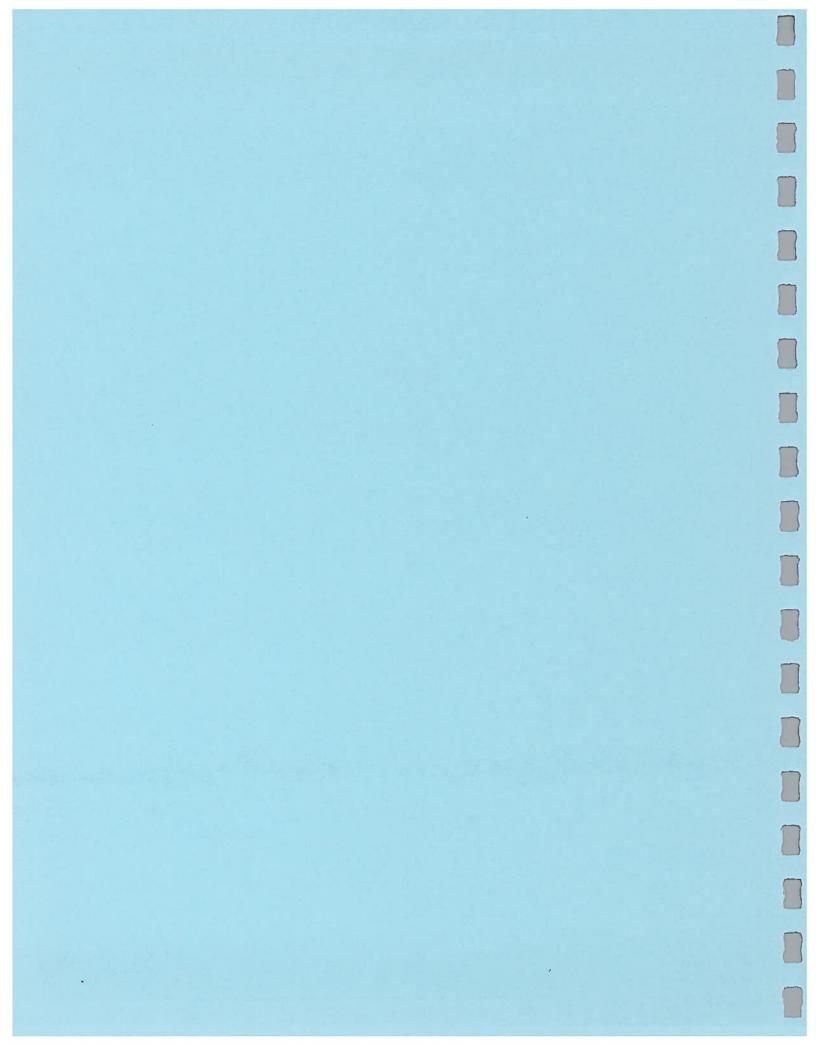


Table A

Volatiles	Semivolatiles	Pesticides
Chloromethane	Phenol	Alpha-BHC
Bromomethane	bis(2-Chloroethyl) ether	Beta-BHC
Vinyl Chloride	2-Chiorophenol	Delta-BHC
Chloroethane	2-Methylphenol	
Methylene Chloride	2,2'-oxybis(1-Chloropropane)	Gamma-BHC (Lindane)
Acctone		Heptachlor
Carbon Disulfide	4-Methylphenol	Aldrin
,1-Dichloroethene	N-Nitroso-di-n-propylamine	Heptachlor Epoxide
.1-Dichloroethane	Hexachloroethane	Endosulfan !
is-1,2-Dichloroethene	Nitrobenzene	Dieldrin
	Isophorone	4,4'-DDE
ans-1,2-Dichloroethene	2-Nitrophenol	Endrin
hioroform	2,4-Dimethylphenol	Endosulfan II
,2-Dichloroethane	bis(2-Chloroethoxy) methane	4.4'-DDD
-Butanone	2,4-Dichlorophenol	Endosulfan Sulfate
romochloromethane	1,2,4-Trichlorobenzene	4,4'-DDT
1,1-Trichloroethane	Naphthalene	
arbon Tetrachloride	4-Chloroanime	Methoxychlor
romodichloromethane	Hexachlorobutadiene	Endrin Ketone
2-Dichloropropane		Endrin Aldehyde
	4-Chloro-3-methylphenol	alpha-Chlordane
s-1,3-Dichloropropene	2-Methylnaphthalene	gamma-Chlordane
richloroethene	Hexachlorocyclopentadiene	Toxaphene
ibromochloromethane	2,4,6-Trichlorophenol	·
1,2-Trichloroethane	2,4,5-Trichlorophenol	Polychlorinated Biphenyls
enzene	2-Chloronaphthalene	- oryentermance Dipitalyis
ans-1,3-Dichloropropene	2-Nitroaniline	A
готобогт	Dimethylphthalate	Aroclor-1016
-Methyl-2-Pentanone	Acenaphibylene	Aroclor-1221
Hexanone		Aroclor-1232
etrachloroethene	2,6-Dimtrotoluene	Arocior-1242
	3-Nitroaniline	Aroclor-1248
1,2,2-Tetrachloroethane	Acenaphthene	Aroclor-1254
2-Dibromoethane	2,4-Dinitrophenol	Arocior-1260
oluene	4-Nitrophenol	
hlorobenzene	Dibenzofuran	i i
hyl Benzene	2,4-Dinitrotoluene	
утеве	Diethylphthalate	
otal Xylenes	4-Chlorophenyl-Phenylether	
3-Dichlorobenzene	Fluorene	
4-Dichlorobenzene	4-Nitroaniline	
2-Dichlorobenzene		
	4,6-Dinitro-2-Methylphenol	
2-Dibromo-3-chloropropane	N-Nitrosodiphenylamine	
	4-Bromophenyl-Phenylether	
	Hexachlorobenzene	
	Pentachlorophenol	1
	Phenanthrene	
	Anthracene	
	Di-n-Butyiphthalate	
	Fluoranthene	
	Pyrepe	1
	1 7	1
	Butylbenzylphthalate	
	3,3-Dichlorobenzidiene	
	Benzo(a)Anthracene	}
	Chrysene	
	Bis(2-Ethylhexyl)Phthalate	1.
	Di-n-octyl Phthalate	1
	Benzo(b)Fluoranthene	1
	Benzo(k)Fluoranthene	1
	Benzo(a)Pyrene	1
	· ·	
	Indeno(1,2,3-cd)Pyrene	1
	Dibenz(a,h)Anthracene	1
	Benzo(g,h,i)Perylene	1

Table A (Continued)

Inorganics		
Cyanide Total Dissolved Solids		
TAL Metals		
Aluminum		
Antimony		
Arsenic		100-00
Barrum		
Berylinum		
Cadmium		
Calcium		
Chromium		
Cobalt		
Copper		
iron		
Lead	A December 1	
Magnesium		= L = 1
Manganese		
Mercury		
Nickel		
Potassium		
Selenrum	The second secon	
Silver		
Sodrum		
Thallium		
Vanadium		
Zmc		



GROUNDWATER SAMPLING SUMMARY

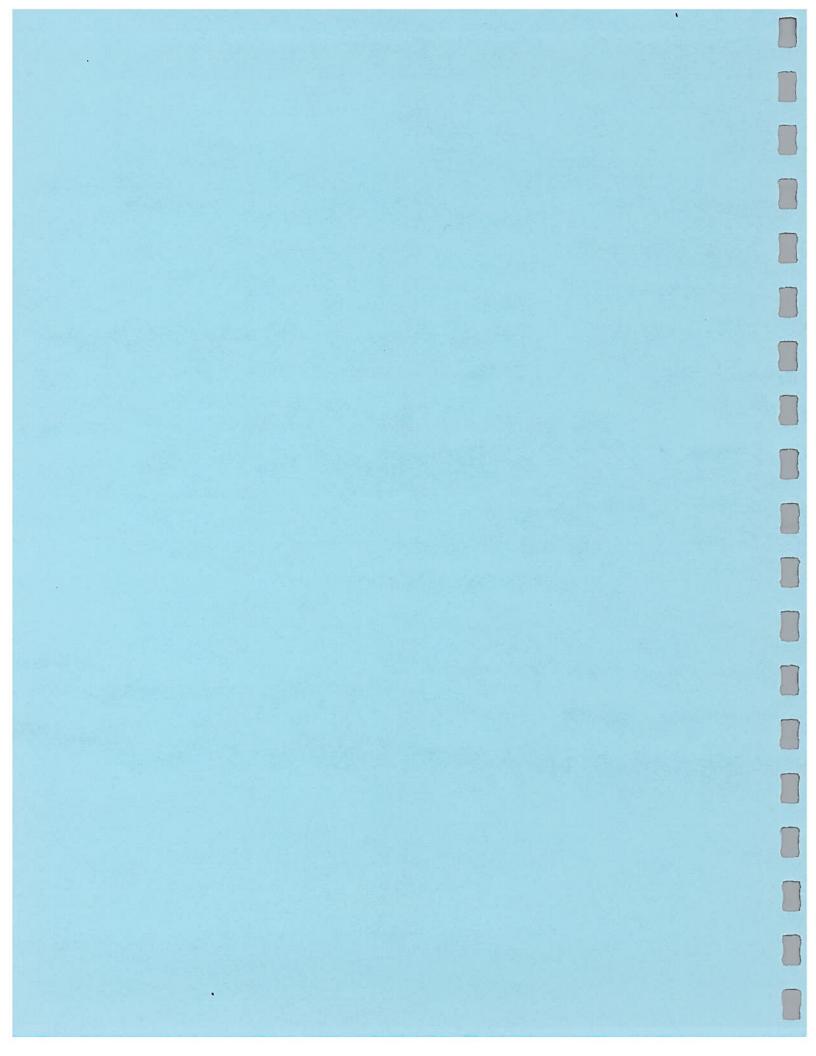


Table B

Phase 1 Groundwater Sampling Summary – May 1994 Stabilized Field Measurements at End of Low-Flow Purging Enterprise Avenue Landfill

		Sample	9			Water Quality Parameters	Parameter	18		Final		Rottom	Well
Well	Date	-	Identification	Į.	Specific		i			Depth	Purge	of Pump	Total
ID			TOTAL TOTAL OF	d ()	(mS/cm)	ATC)	EP (EP	Oxygen (mg/l)	Turbidity	to Water	Rate	Setting *	Depth
WM - 1S	05-May-94	1150	2-GW-WM-1S	18.1	188	452	358	(1/2/m)	O INTO	(301/31)	(LPE)	(II/IOIC)	(fi/TOIC)
WM - 1M	05-May-94	1150	2-GW-WM-1M	17.0	477	684	128	2.5		12.48	0.15	15.0	17.70
Duplicate			2-DP-WM-1M			2	100	7:7	14	17:07	0.35	35.0	42.20
WM-1D	05-May-94	1600	2-GW-WM-1D	15.1	311	50 9	101		1	20,1	-		
WM-2S	05-May-94	945	2-GW-WM-2S	16.6	07070	65.9	89	2.4	2000	14.38	0.45		130.50
WM-2M	02-May-94	1715	2-GW-WM-2M	175	500	1000	9	7.7	0.90	13.80	0.4	215	29.00
WM-2D	02-May-04	1615	CW WAY		COL	70.0	171-	4.5	5.2	13.88	0.5	43.0	49.00
WW 36	7 Mar. 00	CTOT	77-WW-WD-2	10.4	Sy.	2,88	2201	3.0	34	14.92	0.475	0.901	116.60
AND AND	02 Nay - 94	CITI	2-GW-WM-3S	16.6	1956	6.77	-121	2.8		19.35	0.45	250	32.00
WEN - JAN	02-May-94	1055	2-GW-WM-3M	16.3	1442	6.52	-137	1.7	26	13.20	300	200	75.00
WM-3D	02-May-94	1320	2-GW-WM-3D	15.7	324	6.28	168	1	2	67 64	0.0	42.0	49.00
MS/MSD	- except cyanide							2	1/2	00.01	0.0	123.0	132.65
WM - 4S	03-May-04	12051	2-GW-WM 46	10.7	10000								
WM-AW	02 Man 04	0000	24 - WW - WD 2	7:01	W.W	0.44	-110	1.4	40.8	6.82	0.2	15.0	22.50
WW-An	03 Man 04	OCOL	2-GW-WM-4M	16.0	876	6.87	-123	1.6	3	8.19	0.5	49.0	26.00
MSMSD	- Only outpide	10001	7-GW-WM-4D	14.0	311	6.73	130	2.9	> 200	7.76	0325	128.0	135.00
THE CO	Olliy Cyalling												
WM-33	04-May-94	1110	2-GW-WM-5S	13.2	1582	6.42	-94	23	503	10.25	170	160	21.00
WM -5M	04-May-94	1045	2-GW-WM-SM	14.7	803	7 10	- 164	14	٥		1.0	O'CT	71.00
WM-SD	04-May-94	1300	2-GW-WM-5D	13.0	332	8 32	143	1:1	0	11:4	0.4/2	45.0	51.50
WM -6S	04-May-94	1545	J Sy-MW-MD-2	15.01	777	633	125	24	>AW	12.53	1.05	135.0	142.20
WM-6M	03-May-94	1530	MA-MW-WD-C	1 21	31.5	0.03	215	1.2	3.1	9.28	0.5	18.0	27.10
WM-6D	03-May-04	1510	200 Mill 100 C	1	211	ck.o	- 168	0.8	4.03	15.05	9.0	44.0	52.20
II WAR	V2 - 1848Y - 27	TATE!	1 70-WW-WD-7	14.4	510	6.51	93	2.4	32	13.87	0.3	10501	115 00

(tVTOIC) Feet from top of Inner casing * Approximate Setting

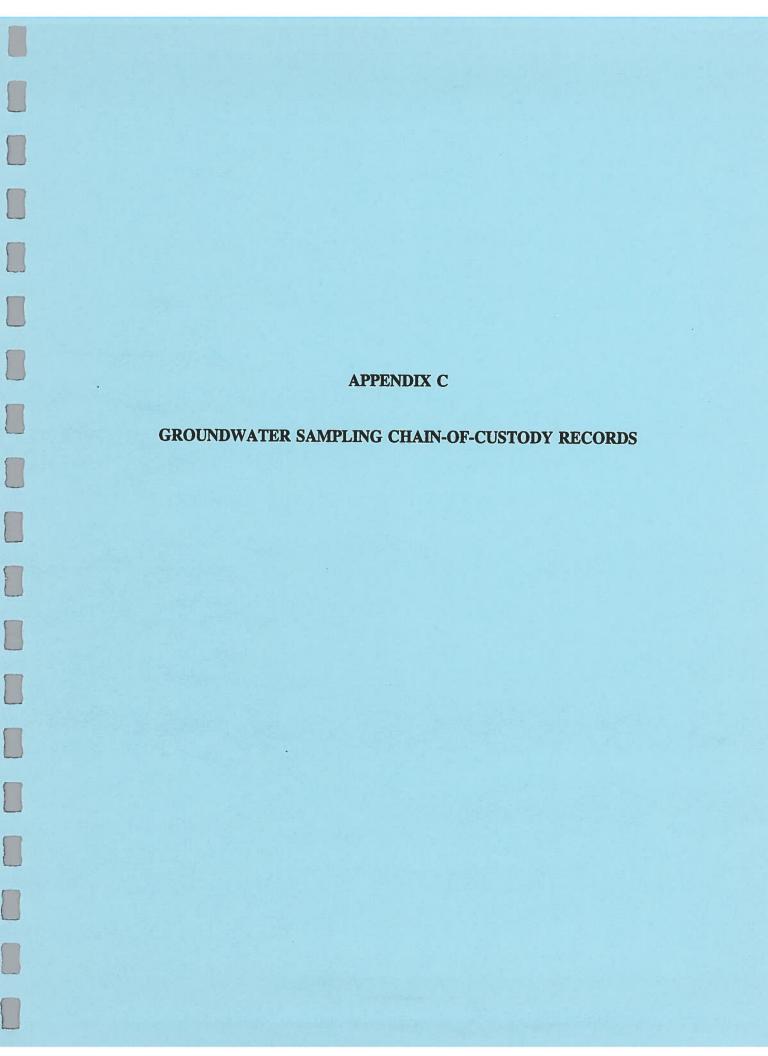
C - Degrees Ceblus mS/cm - Milliselmens/centime br ATC - pH units adjusted for temp

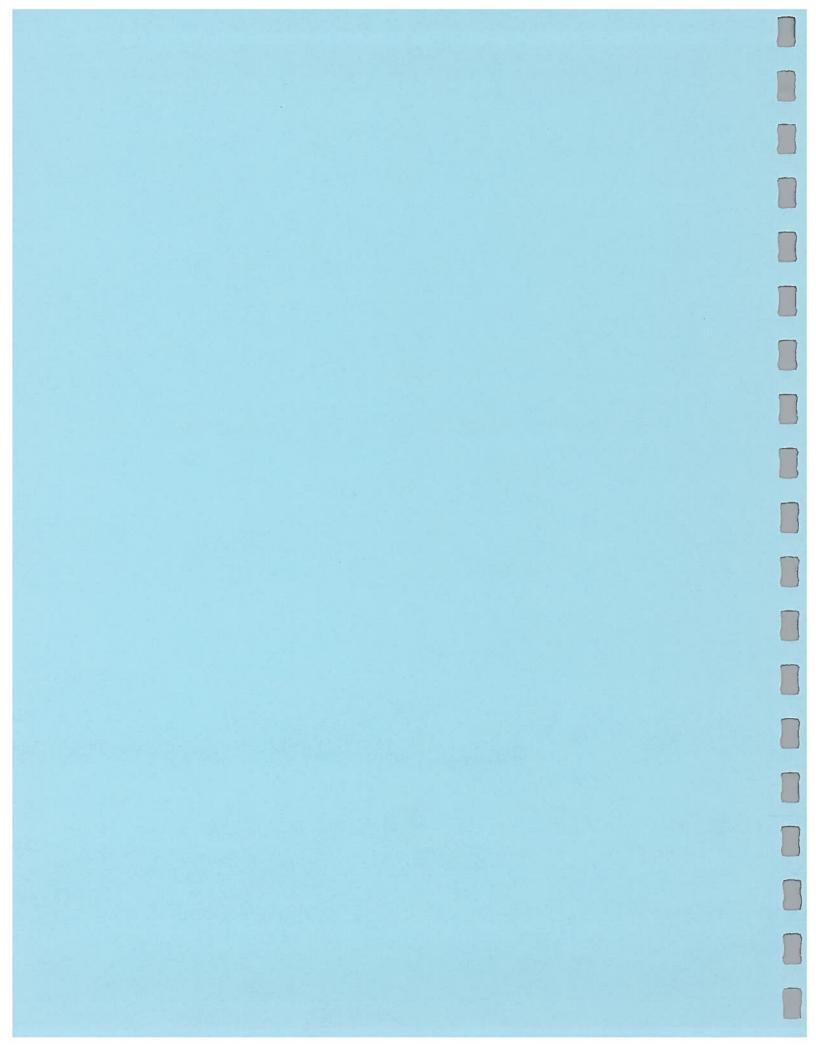
mV – Millipats mg/L – Milligrams/Liter NTU's – National Turbidity Units

WM well total depth measuraments have been calculated using construction depth and field measured stick up. PA DER / EPA split samples collected at WM-1M, WM-2S, WM-5M, and WM-6S.

Lpm – Librs per minute mHZ – Millihertz >200 – Greater tran instrument's range

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9405L449

Custody Transfer Record/Lab Work Request

Page	STA
o. 人	17.73

Relinguished by	10)97	FIELD PERSO		L- EP/ICLP Leachate WI- Wipe X- Other F- Fish	DL - Drum Liquids	Solids	> C	W - Water	SE - Soild	MATRIX	اج کا	oc Special	Project Contact/Phone	Work Order #	Est. Final Proj. Sampling Date	Client TC	
71	Canc 10)92 10 91	NNEL: C			9004	003	002	00	5 E		46		c/Phon	6	. Samp	103 - 8	ш
Received by	- Ju	FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS	Temp - 6		TAIP	3-5h	2-6w-	2-6w-	Cilen	1	176-61	CLE	b) 4)	100 - 66 1.0		8 Wester	
Date TI	entrution Method - Organico - Inoganico	Y SHADED ARE	1.4/20		BLANK	1-wm-42	W-WM-2	w-wm-35	Cilent ID/Description		e bue 6	SE LIVE		10012	-67-	ſ	, ,
Time	St.	AS	7.1~/6.8		1	124	20	ан!			13/02	day	Γþ	000	31		
Relinquished			W Cs						QC Chosen (✓)	E of the			1.0 - Co.		2	and to 11	7:
7	612	ATE/RE			3	3	3	3	Matrix		REQUESTED		Draean	Volume	#/Туре	# Joingerator	
Received	2 ms m	DATE/REVISIONS:			1	5394		Shin	Date Time Collected Collected		STED				#/Type Container	rator #	
	ms ms	MSD.			j	1030	1615	5121	Time Collected		\		Solid	1-1	Solid		
Date	metals	Ç S			×	×	X	X	0.500		VOA			40	784707		1
Time		2				X	X.	×	96320		BNA	ORGANIC	3	10	17	k	4
•	A A	5,				×	X	X	060011		Pest/ PCB	Nic	4	35	_ 5	4	
Discrepa Samples COC Re NOTES:	K how	1000x0			Ļ		×	1		-	Herb	Ц	* **			╀	4
Discrepancies Between Samples Labels and COC Record? Y or NOTES:		5				,		- 1		WEST	- 1	12			+	+	-
Between Service of Programmer	क्षिर क्षि	5								<u>Ş</u>	- 1	-	+		-		$\frac{1}{2}$
		_			×	>	X	X	M 451 70 3	alytic	Metal		1	7	1	+	4
Proper 5) Rec Holdin	Samples we 1) Shipped Hand Delive Airbill # 2) Ambient (2) Ambient (3) Received Condition 4) Labels in	*				×	χ	X	MHSL TOWN	WESTON Analytics Use Only	CN	INORG	Cocc	F		+	ᅯ
Properly Pesaved From N S) Received Within Holding Times N Y N	Samples were: 1) Shipped or 1) Shipped or 1) Shipped or 1) Shipped or 2) Ambient or or 2) Ambient or or 3) Received in Good Condition Y or N 4) Labels Indicate	ESTO				×	X	X	#7DS	S S	To		3	150		_	4
Vilinin Z	Samples were: 1) Shipped or Hand Delivered Airbill #	WESTON Analytics Use Only								-	3			2		1	1
Sami COC Upon	COC Tape 1) Present Package 2) Unbrow Package 3) Present 3) Present	tics Us						_	31.]
Sample (Yor N COC Record Present Upon Sample Rec't or N	COC Tape was: 1) Present on Outer 1) Present on Outer Package (Y or N 2) Unbroken on N 4) Unbroken on	e Only						Ц				\downarrow	1			\downarrow	4
Present Recit	was: If an Outer I							. 1	1100			_	+	Н		+	
_ # <u>_</u>	8 4								L	L							_

Custody Transfer Record/Lab Work Request Are: Land-toll Are:	2 Gut-com-Wa-	Other Selection of the Control of th		sectiate of the designation of the	EP/TCLP > >	Liquida 1008 Trio Blank	Solitos 007 2-GW-WM-3) V	006 3-6W-WM-3M"	005 3-GW-WM-35	SMG	nent ID Client ID/Description Cho		5/344 51	Date Bac'd (4 4 94) / 3/435 him	Day Marine 30 Days	AD Project Manager	100	10-100-100 O	これがかっこ	Est Engl Brod Sampling Date 05-07-94	TCB - Enterprise Ave Land to !!		WESTON Analytics Use Only
WESTON Analytics Metal INORG F TOWN TOS TO STATE OF THE S		Ц	1			0.00	٤	W 5-2-6		MSD	Motrix	# ·		ANALYSES			一	1			Refrigerator #	ransfer R	
WESTON Analytics Metal INORG F TOWN TOS TO STATE OF THE S		M	11	リルナリンマ		4 1045 V	-	M 10.85 V	1115	0						N-70H	- A1	Liquid Works	Solid	CAL PADA		ecord/La	
TDS & SW	1	YY		4			1/	<u> </u>	1 1	0		-	루션 PC	s∳ B	ORGANIC	PARIVONE		20 950		KASKAY.	Н		
TDS & SW						7-					•	WESTON Analy										Reques	
		₹		V		q .	<u> </u>	V V V	ノイノ	┢		tics Use Only	CN		Ц	NOTABLE STATES		17 17 30		147	3 3 3	**	
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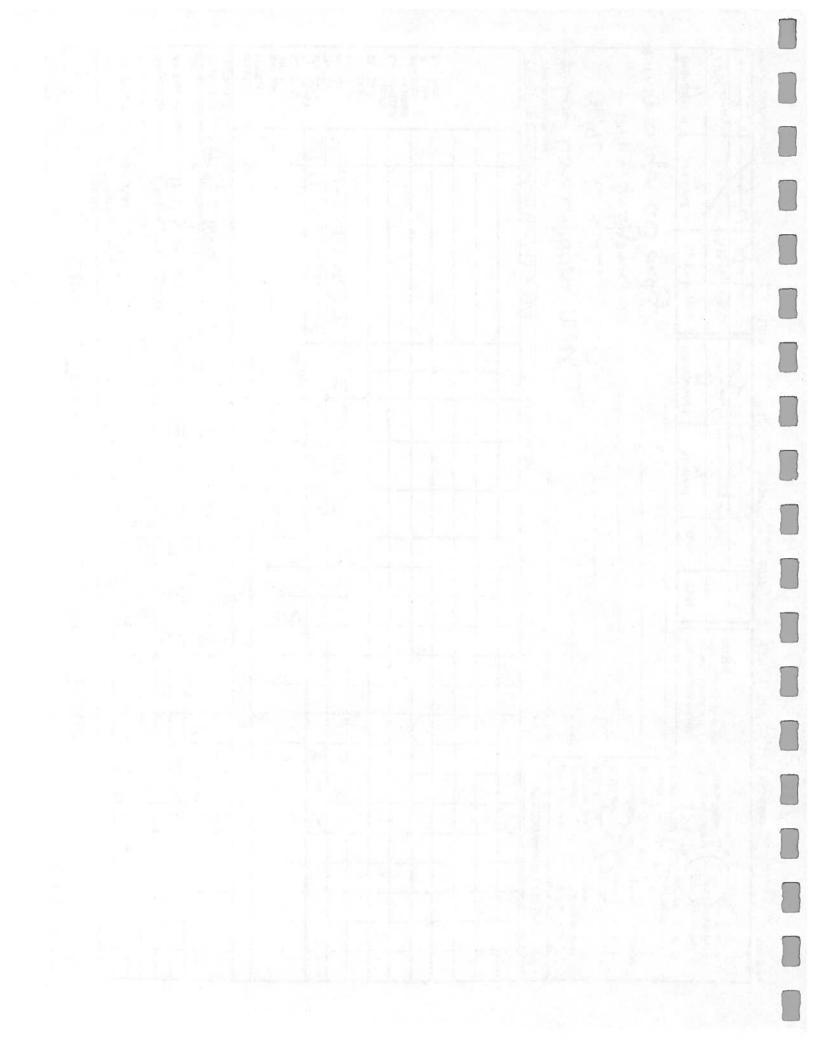
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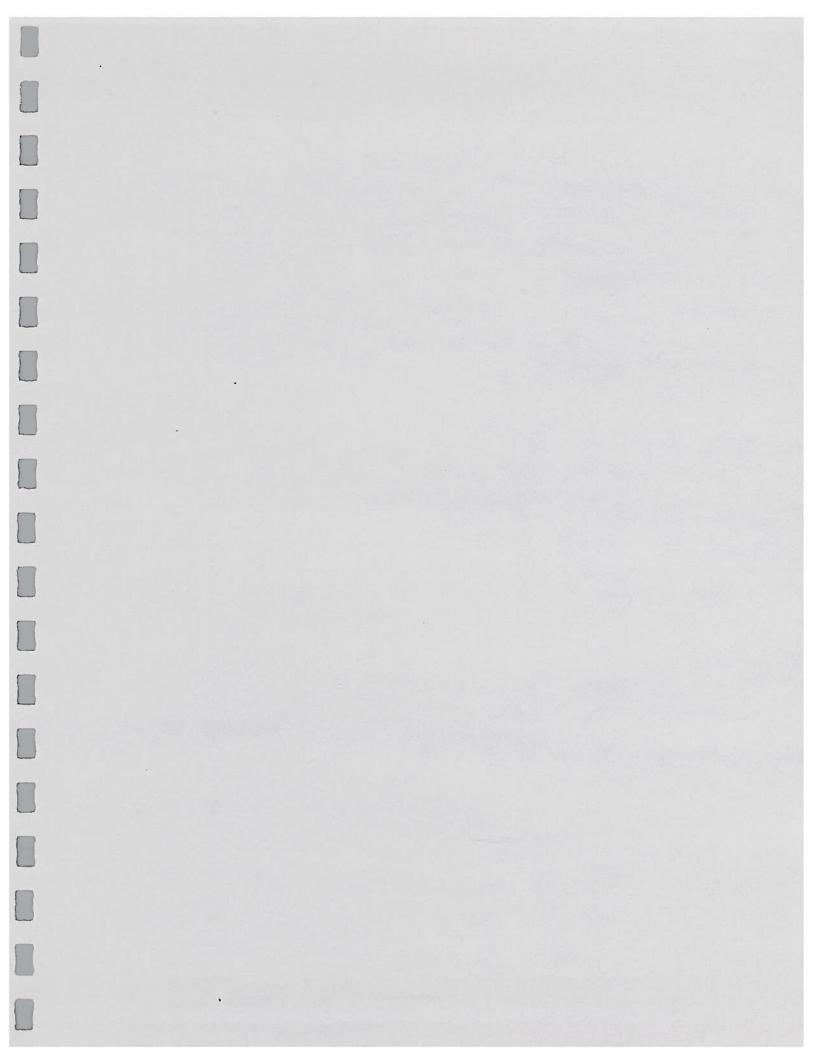
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	Cooler#	L378 Ref#	L377		L375	2 L373	L372		2	RFW 21-21-001/A-7/91	
	(h	1		F.	2 to 2	1-4-4-4	
N Y OF N	Holding Times	COC Record? Y or N	j	44			178	5/3/94	6	5 M Campo	
z	5) Received Within	Discrepancies Between Samples Labels and	Time	Date	Received by	Relinquished by	Time	Date	Received by	Relinquished by	
ed Sample Y or N	Property Preserved					(UP at	9	1.			
,	4) Labers Indicate				6	A CONTRACTOR OF THE PARTY OF TH	1000	- BSA	4 see 2 45.3	- A de setu	
	3) Received in Good				05	F 9		15/4	iningance 10/9	Mr	
2) Unbroken on Outer Package Y or N	2) Ambien of ormed		7 L				(/92	pragamica 10/92	2	
þ	Hand Delivered				ω	CN CN	まなる	Harry .	mentation	* Now concentration method for -	
COC Tape was.	Samples were:				2	(5)	MS/M	oted A	ume colle	Extra roll	
WESTON Analytics Use Only	WESTON A				VISIONS:	DATE/REVISIONS:	DAREAS	NLY SHADE	IL: COMPLETE OF	FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS Special Instructions:	
					-22	i i					
								The second second	The state of the s	T	

the as to compart SE-Sediment
SE-Sediment
SO-Solid
SL-Sludge
W- Water
O- Oil
A- Air
DS- Drum
Solids
DL- Drum WI - Wipe X - Other MATRIX CODES: RFW 21-21-001/A-7/91 Relinquished by Project Contact/Phon Est. Final Proj. Sampling Date __ Date Rec'd AD Project Manager Work Order # 10535 Client Account # **WESTON Analytics Use Only** Special Instructions: FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS EP/TCLP Leachate Low Cincentration mulfinals 10/92- Organica 10/91- Inoganica 108-010 ᅙ Enterprise Received by Dete 5 7 94 • 9m-40 27-EM-CM Client ID/Description 5394 Date Custody Transfer Record/Lab Work Request 1746 Land 5: (1 Refrigerator # 8 Time 00-00-00 L372 (Bengar) MO-948 Relinquished by Chosen MS MSD Matrix 3 DATE/REVICIONS: **P**Volume L373 ANALYSES REQUESTED Preservatives Matrix #/Type Container **51394** 5/3/94 Date Time Collected Collected Received by L375 1205 1000 Solid H & AAAAA Liquid HO 1 190 Date HCNIONAL MANIC VOA 0634D L377 BNA Pest PCB 0625I) Time 3 ፠ Ococil Herb Discrepancies Between NOTES: Samples Labels and COC Record? Y or L378 **WESTON Analytics Use Only** Ref# z INORG INORG muscio Metal Properly Preserved 2) Ambientor Cr 5) Received Within Holding Times Condition Y or N 3) Received Good Hand Delivered 1) Shipped Samples were: Airbill # 1 200 Hz ÇN RINT X **WESTON Analytics Use Only** Cooler# ITDS 105 d 9 <u>ٰ</u>و (4) Hybroken on Page Sample Y or N 3) Present on Sample
Y or N Package Y or N Package Y or N COC Tape was ₎2) Unbroken on Outer Present on Outer Upon Sample Rec't Record Present 으 381-596a







D8 - Drum Solids DL - Drum Liquids L- EP/TCLP Leachate SE-Sodiment SO-Solid SL-Sludge W- Water O- Off Relinquished by MATRIX CODES: AD Project Manager Control of Street Art 30 Est. Final Proj. Sampling Date 5-7-94

Work Order # 10535-001-001-0070 Low Concentration Project Contact/Phor Date Rec'd 5-4-44 Special instructions: FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS Account # WESTON Analytics Use Only 21H750Hb 10/92 Organics 191 Inonganics 700-118 WW 1845 589 00/ 00715-GW-WM-5M Received 8-GN-WM-52 2-6W-WM-53 SO-THA CHO-Alla -F-B-+ 7739 5-4-91 ent . TCD-CAL- 30 LAL Client ID/Description 7.500 6H 84 Date Custody Transfer Record/Lab Work Request 128 1800 Time <u>जियान</u> (Began) 915-8A At March Relinquished Chosen MSD 18 5-694 1 Subbadi \$ Preservatives ANALYSES REQUESTED Motrix Volume Refrigerator # #/Type Container Date Collected Received Time Collected 1300 1045 1110 Liquid ///62/9/67 Liquid 1000/1500/9576 Date 2 days VOA CLOCHE BNA ORGANIC 3 Pest/ PCB (CC8H Discrepancies Between Samples Labels and COC Record? Y or N Lockhad Herb NOTES: **WESTON Analytics Use Only** -S Holding Times Metal MHSUTO NORG 5) Received Within Properly Preserved 1) Shipped or Hand Delivered 3) Received In Good Condition Y or N 2) Ambient or Chilled 4) Labels Indicate Alrbin # Samples were: CN **WESTON Analytics Use Only** Page 3) Present on Sample Package Y dr N SEM Opon Sample Rec'l COC Record Present Sample O or N 4) Unbroken on 1) Present on Outer Package (Y) pr N COC Tape was: 2

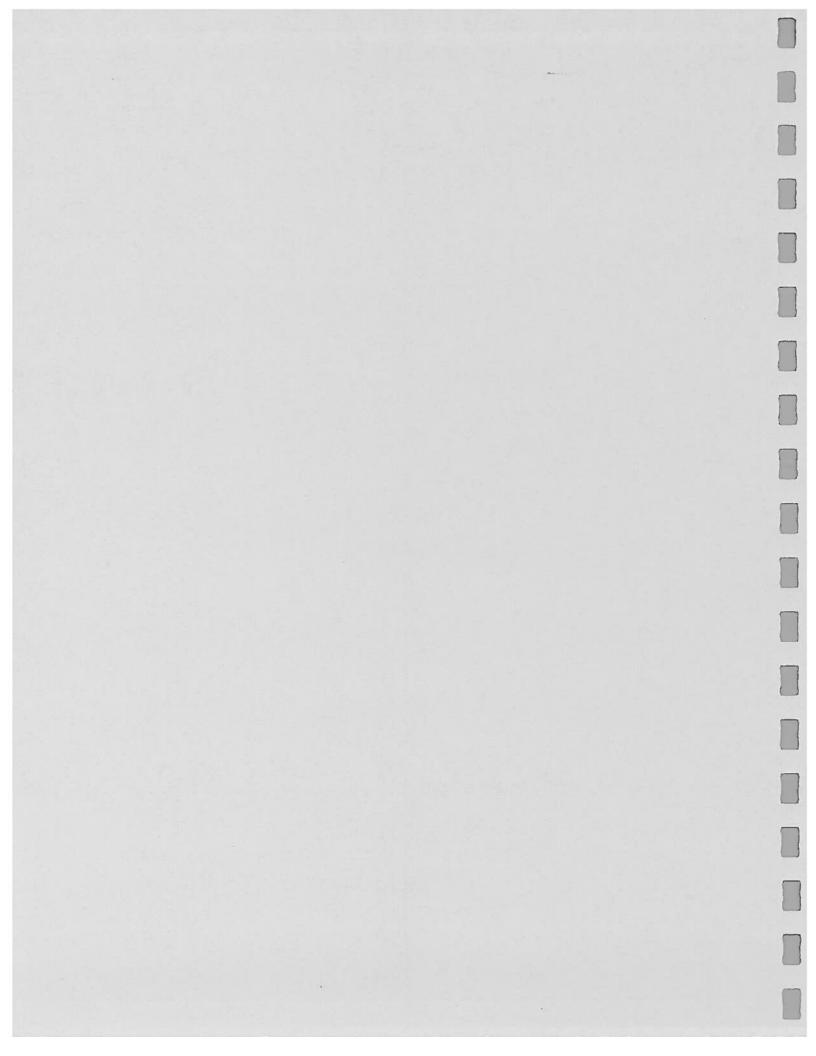
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Dt - Drum Solida DL - Drum Liquida L - EP/TCLP Leachale Din Samow 5.M. (amno 5-4-94 0900 RFW 21-21-001/A-7/91 S. Soliment SD. Solid SL. Siudge W. Water O. Oli DB. Drum MATRIX CODES: Work Order # 10535 ~ 901 - 901 - 0070 - 90 AD Project Manager Project Contact/Phone Relinquished Date Rec'd 5-1-14 Account # **WESTON Analytics Use Only** * Low Concentration methods FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS 77775076 169 - Enterpriss Ave 10/92 - Organics 10/91 - Inoganics 006 2-FB-WM-5D 04 | 2 - 5 W-Wm- 6m 0012-6 W- WM-60 5 F Received by rio Blank Client 1D/Description Date Due Sell となる Date **Custody Transfer Record/Lab Work Request** 38 Time L372 and fall Retrigerator # 15 See per Preserv Relinquished by Chosen Chosen SISAL Note: L373 Preservatives ANALYSES REQUESTED Σ Matrix #/Type Container 5/3/94/530 5/394/570 Received by 5/1/91 08/5 54 AV 0835 Collected 0 L375 Time Liquid 4 5 2A 2A Solid Liquid K10m1930 ىعا JUM Regid VOA HG ineral count 00040 L377 TEL BNA 3 Occaso Pest PCB 0608 H 2 Discrepancies Between Samples Labels and COC Record? Y or N NOTES: Herb L378 1 2 2 **WESTON Analytics Use Only** Ref# only z 15 5) Received Within)
Holding Times
Y or UDO HEAVIOUR Metal MHSZ 4) Labely distilled Airbill Airbill Condition, 2) Ambient of GH 1) Shipped 3) Received in Good Samples were: 4 CN 181 181 Cooler# **WESTON Analytics Use Only** X TDS **ITOS** Page Upon Sample Rec't COC Record Present Sample Y or N Present on Sample 1) Present on Outer Package Y or N 4) Unbroken on Package Y or N Unbroken on Outer COC Tape was: < 41-K-5 4 000 381-596я





A- Ar
A- Ar
D9-Drum
Solids
DL-Drum
Liquids
Lep/rCLp
Leachate
W1- Wipe
X- Other SE-Sediment SE-Sediment SI-Solid SI-Sludge W-Water O-Oil COOES: AD Project Manager Relinquished McCarmo-7 Project Contact/Phon Est. Final Proj. Sampling Date 5-5-94 Work Order # 10535-001-001-0070-00 Special instructions: Date Rec'd Thelac FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS VOA's all in one cooler w/TripBlank WESTON Analytics Use Only SP TSP TO your concentration methods morganica 10/91 oreganica 21-0 TCB-EAL **₽**₽ Received Modes! 2-6W-WM-1S 2-6W-WM-65 Costu# 732 10/92 -dual Client ID/Description 36.4 5/6/94/830 Date **Custody Transfer Record/Lab Work Request** Time S S 8.109 815-0879 n. M. John Mery of your Venu Relinquished by Chosen MS MSD S I 7 M. S S. 674 1. S. ANALYSES REQUESTED Ε ٤ ٤ Matrix Preservatives Volume #/Type Container Refrigerator # 73 Received by Date Collected 5-594 5-5-91/09/15 5-4911545 8 Subbino Time 120 Solid Solid 4/64 3/6 3/60 300 Date Silzpre TCL VOA 1/8 ml 950 950 mL TCL BNA ORGANIC Time DEC = CTC 7 Pest PCB ₹; tak heid COC Record? Y ON NOTES: Discrepancies Between Herb **NESTON Analytics Use** WISS 1/6 1/6 1/6 Holding Times 3) Received in Good Condition Or N NORG Property Preserved or N 4) Labels indicate 2) Ambient or Chilled Received Within Albii Hand Delivered X 1) Shipped Samples were: CN WESTON Analytics Use Only 8 250 7 2745 4 1 2 2 ·.. 3) Present on Sample COC Record Present Upon Sample Rec't Or N Sample or N 2) Unbroken on Outer Package (Y) or N 1) Present on Outer Package (P) pr N --- ; S COC Tape was: 3 9 1 596

Refrigerator # #Type Container Liquid Mark Mark Mark Volume Solid Vo	Received Collected Collect	1	Relinquished Received Date	0	ingones 10/92	contratuen me	Special instructions:	FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS					Other	Leachate	007 2-GW-WM-	ON A-DP-WM-	00 2-GW-WM-		8	MATRIX " ·	Account # Date Due	Del TAT	AD Project Manager ()	Project Contact/Pho	Work Order # 105 35-001-001-0070-00	COLENT	
Herb WESTON Analytics Use Only WESTON Analytics Use Only Metal C Herb WESTON Analytics Use Only WESTON Analytics Were: 1) Shipped or 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	836	=			water									7	1	3			Mairix	0	m 05	Geoper	815-0899	001-0070-00	DU E.		
Herb WESTON Analytics Use Only WESTON Analytics Use Only Metal C Herb WESTON Analytics Use Only WESTON Analytics Were: 1) Shipped or 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6	\dashv	9 y s	. μ	2 _		DATE/REVISION										<u>r </u>			REQUESTED	ANAI YSES	Preservative	Volume	#/Type Conte	Refrigerator		
Herb WESTON Analytics Use Only WESTON Analytics Use Only Metal C Herb WESTON Analytics Use Only WESTON Analytics Were: 1) Shipped or 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	\exists					is:	· ·	-	2		-						ite Time cted Collected		+			Solid	Solld			
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			Property	2) Ambigat 3) Receiver Condition 4) Label (ij)	Hand Dalin Airbill	Samples w	WEST						-			< <	<u> </u>			lytics Use Onl	CN	ц		11-11-11-11-11-11-11-11-11-11-11-11-11-	180		
	Page COC Tape was 1) Present on 0 2 Chage Y 0 1 Chape Y 0 1 Chape Y 0 Chape	2	7	C+-X		or Or	ON Analytic								\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	\	7	_	+7100	У	T.D.	S		150	100		

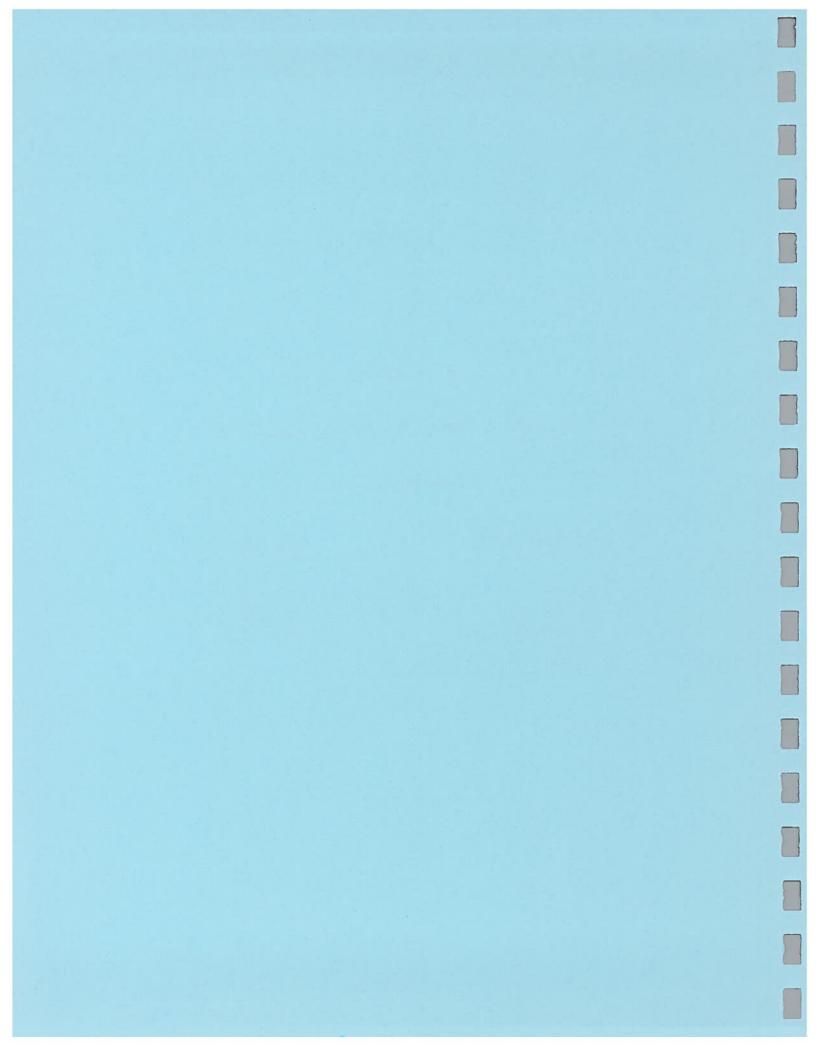
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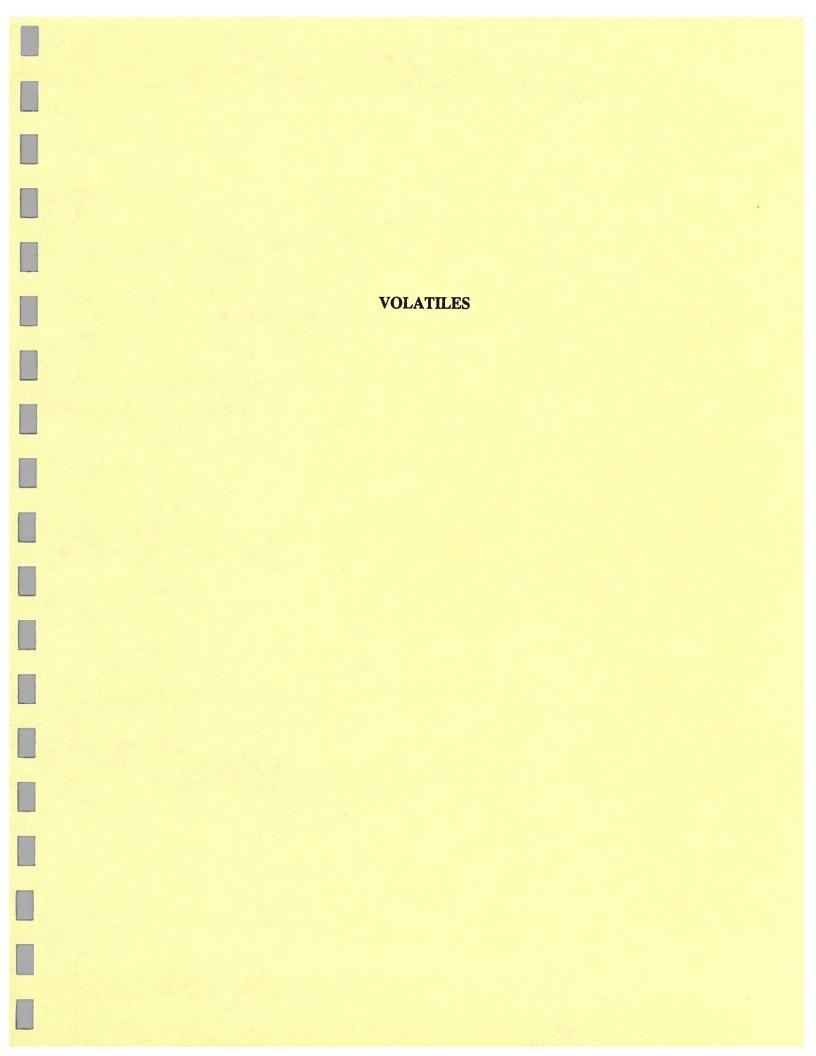
APPENDIX D

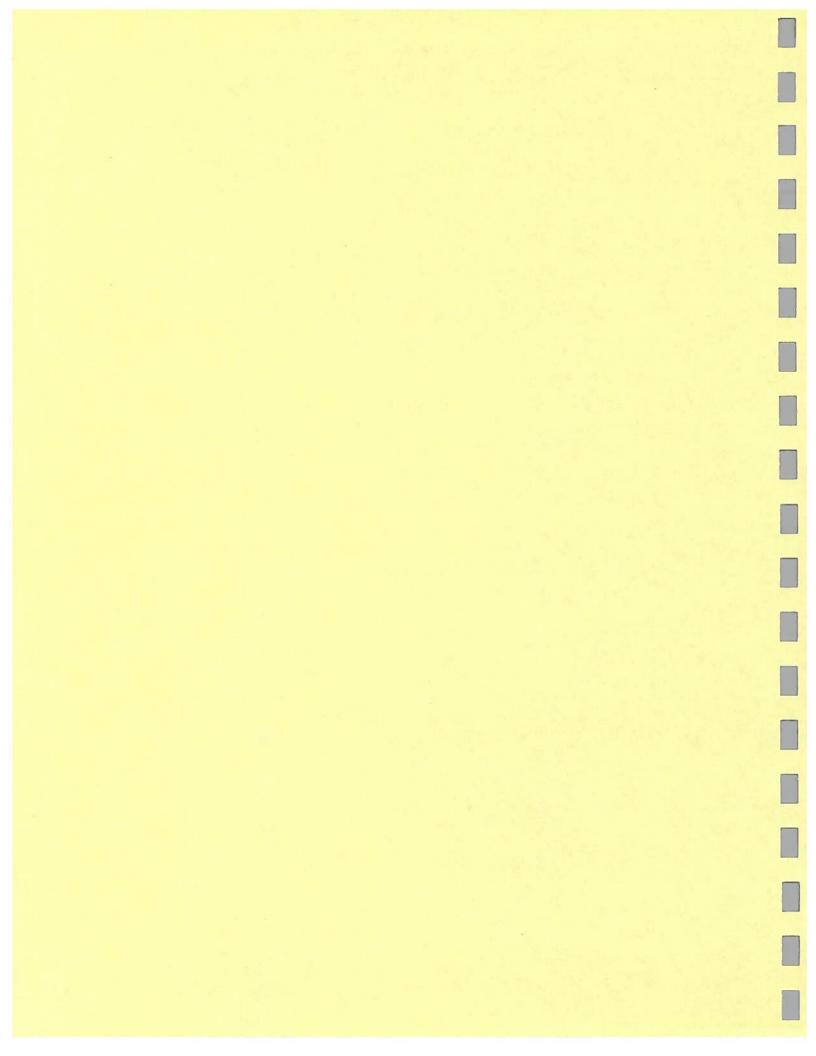
MAY 1994 GROUNDWATER ANALYTICAL DATA

Presentation Order

Analytical Parameters	Batch Numbers
Volatiles	9405L449
Semivolatiles	9405L472
Pesticides/PCBs	9405L493
Metals	
Cyanide and total dissolved soli	ds









GLOSSARY OF VOA DATA

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y.Z = Additional qualifiers used as required are explained in the case narrative.



GLOSSARY OF VOA DATA

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

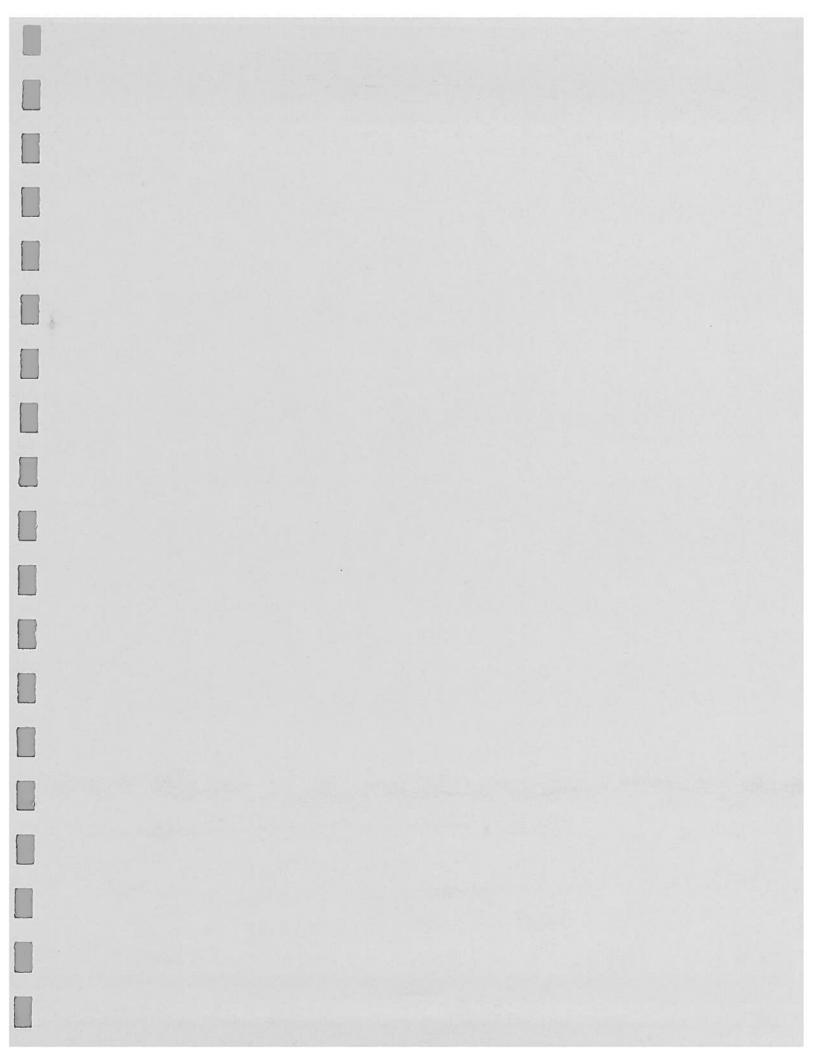


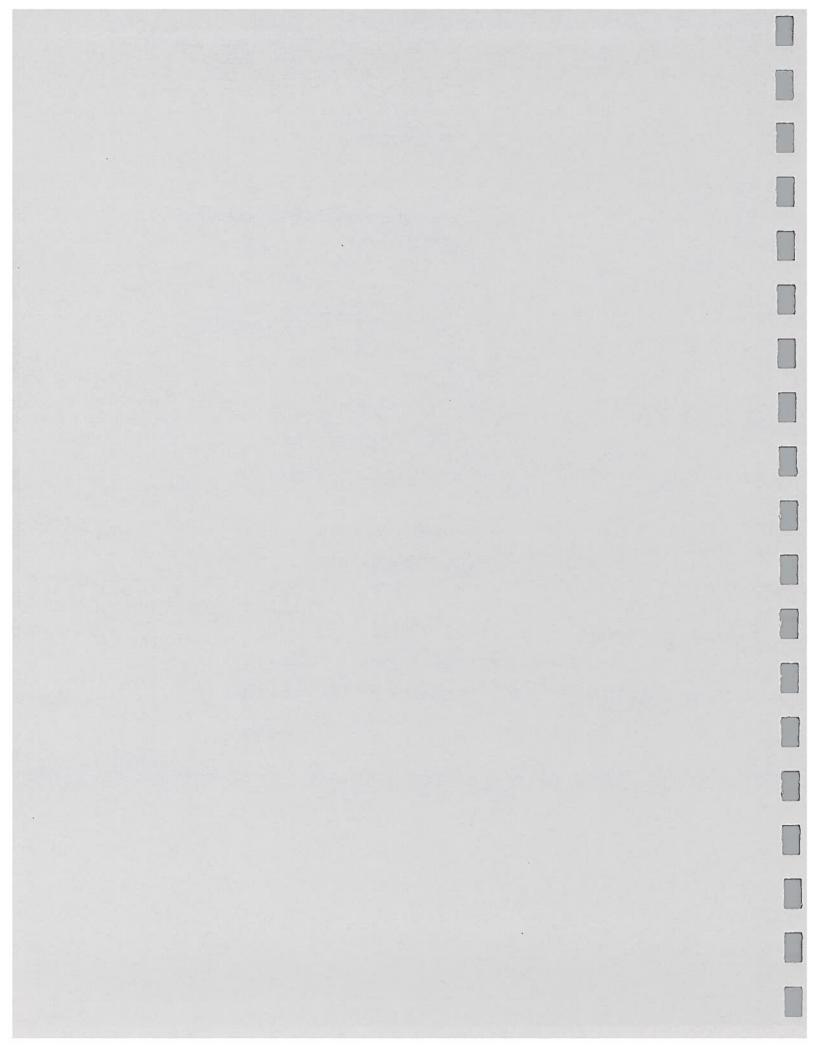
TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: manually added peak not found by automatic quan program.
- PA Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

RFW: 21-21-035/A-08/93







ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL RFW #: 9405L449 **W.O.** #: 10535-001-001-0070-00

Date Received: 05-03-94

GC/MS VOLATILE

The set of samples consisted of ten (10) water samples collected on 05-02,03-94.

The samples were analyzed according to criteria set forth in Superfund Analytical Methods For Low Concentration Water For Organics Analysis (10/92) for Volatile target compounds on 05-12,13-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. Non-target compounds were not detected in these samples.
- 2. All system monitoring compound (surrogate) recoveries were within EPA QC limits.
- 3. All matrix spike recoveries were within EPA QC limits.
- 4. All blank spike recoveries were within EPA QC limits.
- 5. The laboratory blanks contained the common contaminants Methylene Chloride and/or Acetone at levels less than the CRQL. The laboratory blanks 94LVB081-MB1 and 94LVB083-MB1 also contained the target compound Carbon Disulfide at levels less than the CRQL.
- 6. The internal standards and criteria contained on the Form 8s are not appropriate for this method. IS1 was 1,4-Difluorobenzene, IS2 was Chlorobenzene-_{d5} and IS3 was 1,4-Dichlorobenzene-_{d4}.

All internal standard area and retention time criteria were met.

7. Sample pH information has been reported in Section XI (Preparation Logs).

(b) (4)

Laboratory Manager Lionville Analytical Laboratory 06.0/,94, Date

> by t 6/1194

ROY F. Weston, Inc. - Lionville Volatiles by GC/MS Laboratory

RFW Batch Number: 9405L449 Client: TCB/EAL Report Date: 05/31/94 11:58
Work Order: 10535001001 Page: la

	;				7015 51 217	3 CM WW 30	2-CW-WK-3W
	Cust ID:	2-GW-WM-ZM	7-GM-M21-77	7 - GM - MM - 3M	TATE DUMAN	A - GH - NM - JO	16
Sample	RFW#:	100	002	003	004	005	006
Information	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00 0
	Units:	ug/L	1/bn	1/Bn	ug/L	ug/L	ng/L
1,2-Di	1,2-Dichloroethane-d4	93 %	106 %	106	₹ 06	91 %	106 🕏
Surrogate	Toluene-d8	105 %	\$ 86	98	111 %	104 %	99 %
	Bromofluorobenzene	95	98	109 \$	86	101	111 *
	A A A A A A A A A A A A A A A A A A A	:=====================================	. musa maa maa maa maa maa maa maa maa maa m	1 U T	_=====================================	_	1 U
Bromomethane		ם נ	ם נ	ם נ	ם נ	1 U	1 U
Vinyl Chloride		ם נ	ם נ	1 U	1 U	1 U	2
Chloroethane		ם נ	ם נ	ם נ	1 U	ם נ	1 U
Methylene Chloride		. 1 JB	ω	ш	B 2 B	0.8 JB	0.9
Acetone	2	5 U	6 B	5 U	5 4	5 0	· 5
Carbon Disulfide		ם נ	0.2 ЈВ	B 1 U	1 0	0.2 J	
1,1-Dichloroethene		ם נ	, 1 I G	. 1	. 1		· -
1,1-Dichloroethane		1	. 1			· -) h H
Cis-1,2-dichloroethene	hene		· -	· -			
Trans-1, 2-dichloroethene	ethene	· -) 	0 4 4	 	1 1	1 0
1 3-Dichlorosthane		1 1 0	– 1		ם ד	1 U	1 U
2-Butanone		5 U	5 U	5 U	5 U	5 U	5 U
Bromochloromethane		1 4	ם נ	ם ב	ם נ	ט נ	ם ד
1,1,1-Trichloroethane	ane	ם נ	0.1 J	ם ב	ם נ	ם ב	ם
Carbon Tetrachloride	de	ם נ	ם ד	ם ב	1 U	1 4	ם ב
Bromodichloromethane	ne	ם נ	0.1 0	1 U	ם ד	1 U	, p
1,2-Dichloropropane	e	_ 1 U	ם ד	1	ם	. 1 1	, r
cis-1,3-Dichloropropene	opene	_ 1 U	ט נ	ט נ	ם ב	1	
Trichloroethene		1 U	ם נ	Д.	. 1		
Dibromochloromethane	ne	י ד	ם נ	–	י ב		· -
1,1,2-Trichloroethane	lane	ן ם	ם נ	–	. 1		. F
Benzene		_ 1 U	1 U	-		· -	· -
Trans-1,3-Dichloropropene	propene	ם ב	ם נ	ט ב	1 U	. 1	. 1
Bromoform		ו נו	1 0	-	י ב		: C
4-Methyl-2-pentanone	ne	5 U	5 U	ហ	5 4	· 5	5
2-Hexanone		5 U	5 U	5	5 U	· 5	· 5
Tetrachloroethene_		1 4	1 0	ט ב	ן ד	1	-
*= Outside of EPA CLP	CLP QC limits.						

Cust ID	Cust ID: 2-GW-WM-2M	2-GW-WM-2D	2-GW-WM-4M	TRIP BLANK	2-GW-WM-38	2-GW-WM-3M
RFW#:	. 001	002	003	004	005	006
1,1,2,2-Tetrachloroethane	1 U	1 0	ם נ	1	1 11	1
1,2-Dibromoethane	ם נ	ט נ	ם נ	י ב	ı u	- ·
Toluene	1 0	n t	ם ב	ם ב	י ב	0.1
Chlorobenzene	ם נ	1 - U	ם ד	1 U	1 U	בי י
Ethylbenzene	ם ד ם	1 U	ם ד	ם ד	1 U	1 ·
Styrene	ם ז	1 U	ם נ	1 U	1 U	ם ב
Xylene (total)	1 U	1 U	ם ד	ם	0.1 J	ם י
1,3-Dichlorobenzene	1 U	1 U	1 U	n t	1 U	l d
1,4-Dichlorobenzene	ם ב	n t	1 U	1 U	u u	T U
1,2-Dichlorobenzene	1 U	1 U	1 U	ם ד	1 U	n t
1,2-Dibromo-3-chloropropane	ם ב	ם יו ד	1 U	1 U	n t	ם ב
*= Outside of EPA CLP QC limits.						

Weston, Volatiles by GC/MS Lionville

Work Order: 10535001001

Report Date: 05/31/94 11:58

Page: 2a

Sample RFW Batch Number: 9405L449 Recovery Surrogate Information Vinyl Chloride Bromomethane Chloromethane Carbon Disulfide Methylene Chloride Chloroethane_ Chloroform_ Cis-1,2-dichloroethene **Bromochloromethane** Acetone Bromoform cis-1,3-Dichloropropene Bromodichloromethane Carbon Tetrachloride 2-Butanone [rans-1,2-dichloroethene 1,1-Dichloroethene Dibromochloromethane. Tetrachloroethene_ Trans-1,3-Dichloropropene 2-Hexanone 4-Methyl-2-pentanone 1,1,2-Trichloroethane [richloroethene 1,2-Dichloropropane .,1,1-Trichloroethane ,2-Dichloroethane ,1-Dichloroethane 1,2-Dichloroethane-d4 Bromofluorobenzene Toluene-d8 Cust ID: 2-GW-WM-3D Matrix: Units: D.F.: RFW#: WATER 102 98 101 1.00 ug/L 2-GW-WM-3D 007 MS WATER 104 1.00 ug/L 100 5 1 0.2 99 . 101 101 91 94 2-GW-WM-3D 007 MSD WATER 106 94 1.00 ug/L 91 93 88 99 97 TRIP BLANK WATER 1.00 ug/L 94 92 81 800 4 4 4 4 4 4 4 2-GW-WM-48 WATER 1.00 ug/L 107 96 2-GW-WM-4D WATER 97 ug/L 9999 0 Û

*= Outside of EPA CLP QC limits

*= Outside of EPA CLP QC limits.

1,2-Dibromo-3-chloropropane

Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS

RFW Batch Number: 9405L449 Client: TCB/EAL Report Date: 05/31/94 11:58
Work Order: 10535001001 Page: 3a

									*= Outside of EPA CLP QC limits.	*= Out
	o p	99	ਖ	_	l n	_	l L	İ	Tetrachloroethene	Tetrac
	□	₅	a	₅	5 U	_	5 U	i	anone	2-Hexanone
	q	₅	q	₅	5 U	_	5 U	ı	4-Methyl-2-pentanone	4-Meth
	оķ	93	a	1	1 U	_	1 U	l	form	Bromoform
	оф	106	a	·	1 U		ם ב	1	Trans-1,3-Dichloropropene	Trans-
	ep.	98	q	4	1 U		ם	1	ne	Benzene
	æ	92	a	-	1 U		ם	1	1,1,2-Trichloroethane	1, 1, 2-
	q	1	G		1 U		ט	ı	Dibromochloromethane	Dibrom
	æ	92	ਖ		1 U	_	ם ב	1	Trichloroethene	Trichl
	- 40	88	G	1	1 U		1 U	ı	cis-1,3-Dichloropropene	cis-1,
	æ	89	q	_	1 U	_	ם	1	1,2-Dichloropropane	1,2-Di
	ਖ	1	G	-	1 U		ם ב	! 	Bromodichloromethane	Bromod:
	*	92	ਖ		1 U		ם ב	•	Carbon Tetrachloride	Carbon
	d	1	ď	1	1 U		ם ב	!	1,1,1-Trichloroethane	1,1,1-
	d	1	d	1	ם		ם ד	1	Bromochloromethane	Bromocl
	d	₅	ч	5	5 U		5 U	•	none	2-Butanone
	dp	94	₽	1	u u		ם נ	i	1,2-Dichloroethane	1,2-Di
	G	1	ਖ	1	1 U		ט	I	form	Chloroform
	□	1	d	1	1 U		ם נ	•	Trans-1,2-dichloroethene	Trans-
	d	1	G		1 U		1 U		Cis-1,2-dichloroethene	Cis-1,
	d	L	d	1	1 U		ם ב	1	1,1-Dichloroethane	1,1-Dic
	d	_	۵	1	1 U		ם	1	1,1-Dichloroethene	1,1-Dic
	d	۳	4	0.2	0.2 Ј		ם	•	Carbon Disulfide	Carbon
	a	U	۵	U	4 J		5 U	•	le	Acetone
	Яľ	0.6	G	4	1 J		ı J	1	Methylene Chloride	Methyle
	G	_	d	_	1 U		1 U	1	ethane	Chloroethane
	de	80	۵	1	1 U		ם ב	1	Vinyl Chloride	Vinyl (
	d	_	₽	1	1 U		ם ב		ethane	Bromomethane
	d	1	ਖ	1	1 U		1 U		Chloromethane	Chloron
	f1==:		=£1		=====£]]========	====f	# # # # # # # # # # # # # # # # # # #		8 8 8 8 8
	-de	100	40	101	94 %		104 %	1	ry Bromofluorobenzene	Recovery
	оþ	94	de.	98	99		100 ¥	1		Surrogate
	*	95	es.	103	107 %		102 %	1	1,2-Dichloroethane-d4	
{		ug/L		ng/L	1/5n		7/br		Units:	
כ		7.00	_	1.00	1.00		1.00			
0		1 00	•					5		***************************************
1	i	WATER		WATER	WATER	£ .	WATER	WAY	X	Information
Q	<u> </u>	94LVB083-MB1	81	94LVB083-MB1	94LVB081-MB1	94LVB	32-MB1	94LVB082-MB1	REW#:	Sample
		VBLK BS		VBLK	**	VBLK		VBLK	Cust ID:	

*= Outside of EPA CLP QC limits.

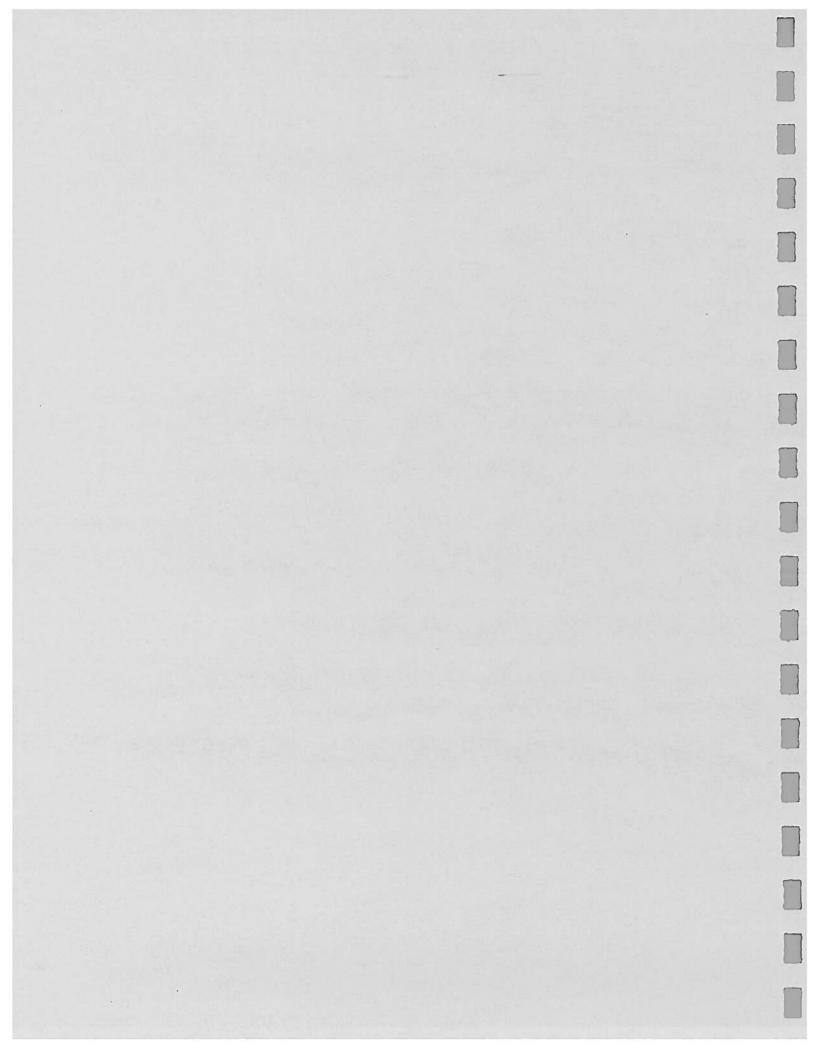
Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/03/94

RFW LOT # :9405L449

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-2M	001	W	94LVB082	05/02/94	N/A	05/12/94
2-GW-WM-2D	002	W	94LVB081	05/02/94	N/A	05/12/94
2-GW-WM-4M	003	W	94LVB082	05/03/94	N/A	05/12/94
TRIP BLANK	004	W	94LVB081	05/03/94	N/A	05/12/94
2-GW-WM-3S	005	W	94LVB082	05/02/94	N/A	05/12/94
2-GW-WM-3M	006	W	94LVB082	05/02/94	N/A	05/12/94
2-GW-WM-3D	007	W	94LVB083	05/02/94	N/A	05/13/94
2-GW-WM-3D	007 MS	W	94LVB083	05/02/94	N/A	05/13/94
2-GW-WM-3D	007 MSD	W	94LVB083	05/02/94	N/A	05/13/94
TRIP BLANK	008	W	94LVB081	05/02/94	N/A	05/12/94
2-GW-WM-4S	009	W	94LVB082	05/03/94	N/A	05/12/94
2-GW-WM-4D	010	W	94LVB082	05/03/94	N/A	05/12/94
LAB QC:						
VBLK	MB1	W	94LVB082	N/A	N/A	05/12/94
VBLK	MB1	W	94LVB081	N/A	N/A	05/12/94
VBLK	MB1	W	94LVB083	N/A	N/A	05/13/94
VBLK	MB1 BS	W	94LVB083	N/A	N/A	05/13/94







ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL RFW #: 9405L472 **W.O.** #: 10535-001-001-0070-00

Date Received: 05-04-94

GC/MS VOLATILE

The set of samples consisted of seven (7) water samples collected on 05-03,04-94.

The samples were analyzed according to criteria set forth in Superfund Analytical Methods For Low Concentration Water For Organics Analysis (10/92) for Volatile target compounds on 05-12,13-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. A non-target compound was detected in sample 2-GW-WM-6M.
- 2. All system monitoring compound (surrogate) recoveries were within EPA QC limits.
- 3. Matrix spike analyses are associated with RFW lot 9405L449.
- 4. The laboratory blanks contained the common contaminant Methylene Chloride at levels less than the CRQL.
- 5. The internal standards and criteria contained on the Form 8s are not appropriate for this method. IS1 was 1,4-Difluorobenzene, IS2 was Chlorobenzene-_{d5} and IS3 was 1,4-Dichlorobenzene-_{d4}.

Internal standard areas were outside QC limits for sample 2-GW-WM-6D. This sample was reanalyzed on 05-13-94 and reported.

6. Sample pH information has been reported in Section XI (Preparation Logs).

(b) (4)

06.01.94

Laboratory Manager Lionville Analytical Laboratory

sma/voa/05-472v.cn

Roy F. Weston, Inc. - Lionville Laboratory Volatiles by GC/MS

	KOY F. WE	r. weston, inc Llor Volatiles by	GC/MS	Labor acory	Report Date:	05/25/94 15:35
RFW Batch Number: 9405L472	Client: TCB/EAL	S/EAL		Work Order: 10535001001		
Cust ID:	: 2-GW-WM-5S	2-GW-WM-5M	2-GW-WM-5D	2-GW-WM-6M	2-GW-WM-6D	2-GW-WM-6D ~
Sample RFW#:	: 001	005	003	004	900	500
Information Matrix:	W	WATER	WATER	WATER	WATER	WATER CO
D.F.:		1.00	1.00	1.00	1.00	1.000
Unites	1/6n :	1/6n	1/6n	1/6n	ng/L	ng/L
1.2-Dichloroethane-d4		101	# 70	101	107	85 %
Surrogate Toluene-d8	86	101	66	* 66	104 %	119 &
Bromoflu		66	66	8 86	104	116
		}=====================================				
Citotomecinane	- : - :) :)	7 -	1 -	- F
Wine Chloride		7 -	7 -	7 -	-	- t
Chloroethane) F	7 -	7 -			D T
Methylene Chloride	1 6	1 -	JR 2 B	2 18	2 c	0.5 JB
Acetone	1 10		32	D S	5 0	ហ
Carbon Disulfide	 	0.3	1 U	0.3 3	0.7 3	D. 9.0
1,1-Dichloroethene	1 U	1 0	1 0	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	1 u	1 U	1 U	1 U	1 U	1 0
Trans-1,2-dichloroethene	1 U	1 D	1 U	1 0	1 U	1 a
Chloroform	1 U	0.3 3	0.5 3	D T	1 0	1 Q
1,2-Dichloroethane	1 U	n T	1 U	1 U	1 1	1 U
2-Butanone	5 U	D S	5 U	D S	១ .	D
Bromochloromethane	1 u	1 U	1 C	1 U	1 0	1 Q
1,1,1-Trichloroethane	1 U	1 U	1 U	1 0	1 O	1 Q
Carbon Tetrachloride	1 U	1 U	1 U	1 D	D T	1 A
Bromodichloromethane	1 D	1 U	1 u	1 n	ם	ם י
1,2-Dichloropropane	1 a	ח	1 U	1 D		D
cis-1,3-Dichloropropene	1 U	1 C	1 n	ם י	D .	DI
Trichloroethene	1 G	ח	1 U	1 U	1	D .
Dibromochloromethane	1 U	1 u	1 0	1 U	ם רו	1 a
1, 1, 2-Trichloroethane	1 U	1 C	1 U	1 U	٦ ٦	1 n
Benzene	1 U	1 C	1 U	1 Q	1 C	1 U
Trans-1, 3-Dichloropropene	1 U	1 C	1 U	1 U	ם	1 a
Bromoform	1 U	1 C	1 U	1 U	1 0	1 D
4-Methyl-2-pentanone	5 G	2 2	2 2	2 C	S S	D 5
2-Hexanone	S U	5	5 0	2 0	S C	5 C
Tetrachloroethene	1 u	1 0	1 0	1 U	7	D 1
*= Outside of EPA CLP oc limits.						

	Cont the	02 500 0					
	cust in:	CORC ID: Z-GW-WM-5S	Z-GW-WM-5H	2-GW-WM-5D	Z-GW-WM-6M	Z-GW-WM-6D	2-GW-WM-6D
	RFW#:	100	005	003	900	900	002
1, 1, 2, 2-Tetrachloroethane		1 U	1 0	1 0	1 0	1 0	REPREP 1 n
1,2-Dibromoethane		1 U	ם ת	ח	ח	1 0	
Toluene		1 U	1 U	1 0	1 0	1 U	-
Chlorobenzene		1 U	1 U	1 0	1 U	1 0	-
Ethylbenzene		1 U	1 U	1 U	1 0	1 U	1 0
Styrene		1 U	1 U	1 U	1 0	1 U	-
Xylene (total)		1 U	1 U	1 C	1 0	1 D	-
1,3-Dichlorobenzene		1 U	1 U	1 U	1 0	1 U	-
1,4-Dichlorobenzene		1 U	1 U	1 0	1 U	1 U	-
1,2-Dichlorobenzene		1 D	1 0	ם נ	1 0	1 0	-
1,2-Dibromo-3-chloropropane	ne	1 D	1 0	1 0	1 U	1 0	-

Roy F. Weston, Inc. - Lionville Laboratory Volatiles by GC/MS

Report Date: 05/25/94 15:35 Work Order: 10535001001 Page: 2a Client: TCB/BAL RFW Batch Number: 9405L472

Cuent	. TD: 2	Cust ID: 2-FR-WK-5D	TNETE OTOF	W.T.W.	VRTK	VRT.K	
			William This				9
Sample	RFW#:	900	007	94LVX069-MB1	94LVX070-MB1	94LVB082-MB1	L
Information Mat	Matrix:	WATER	WATER	WATER	WATER	WATER	Q
0	D.F.:	1.00		1.00	1.00	1.00	י כ
Un	Unite:	T/bn	1/6n	2	1/6n	T/bn	
1,2-Dichloroethane-d4	18-d4	66	\$ 103	95 8	92 %	102 %	
Surrogate Toluene-d8	18-d8	108	96	\$ 106 \$	109	100	
Recovery Bromofluorobenzene	sene	104	8 116	8 107 8	105 %	104 &	
2014年14日16日14日14日14日14日14日14日14日14日14日14日14日14日14日			floocammaanaa	flanconcere		suternamental an	ores resume []
Chloromethane		-	U 1	u 1 u	1 U	1 0	
Bromomethane	5).	-	מ	U 1 U	1 U	1 U	
Vinyl Chloride	1	-	U 1	U 1 U	1 0	1 U	
Chloroethane		H	u 1	U 1 U	1 0	1 0	
Methylene Chloride		0.8	JB 5	В 0.9 Л	0.7 5	ם ב	
Acetone		ı	2	U 5 U	5 0	2 2	
Carbon Disulfide		-	U 0.4	J U	1 0	1 0	
1,1-Dichloroethene			U 1	σ 1 0	1 U	ם ד	
1,1-Dichloroethane	ď	-	U 1	U 1 U	1 U	1 u	
Cis-1, 2-dichloroethene		.	U 1	U 1 U	1 U	1 U	
Trans-1,2-dichloroethene		-	U 1	U 1 U	1 U	1 0	
Chloroform		7	U 1	U 1 U	1 U	1 U	
1,2-Dichloroethane	- 1	7	U 1	U 1 U	1 U	1 U	
2-Butanone		ທ	O S	U 5 U	D S	D S	
Bromochloromethane		-	U 1	U 1 U	1 U	1 C	
1,1,1-Trichloroethane		-	u u	U 1 U	ם ד	1 U	
Carbon Tetrachloride		1	U 1	U 1 U	1 0	1 C	
Bromodichloromethane		-	מ	U 1 U	1 U	1 G	
1,2-Dichloropropane		-	u 1	U 1 U	1 U	1 G	
cis-1,3-Dichloropropene		-	T D	U 1 U	1 U	ם	
Trichloroethene	t	-1	u 1	U 1 U	1 U	1 U	
Dibromochloromethane		-	U 1	U 1 U	1 0	1 u	
1,1,2-Trichloroethane		-	U 1	U 1 U	1 0	1 0	
Benzene		-	U 1	U 1 U	1 U	1 0	
Trans-1, 3-Dichloropropene		1	U 1	U 1 U	1 U	1 Q	
Bromoform	1	1	U 1	U 1 U	1 U	1 U	
4-Methyl-2-pentanone		ß	2	U 5 U	ם ב	2 2	
2-Hexanone		S	D 5	U 5 U	D 2	D S	
Tetrachloroethene		-	u 1	U 1 U	1 0	1 U	
** Outside of EPA CLP oc limits.	ts.						

RFW Batch Number: 9405L472	472	Client: TCB/EAL	B/EAL	Wor	Work Order: 10535001001		Page	40
	Cust ID: 2-FB-WM-	2-FB-WM-5D	TRIP BLANK	VBLK	VBLK	ĸ	1	31
	RFW#:	900	000	94LVX069-MB1	94LVX070-MB1	94LVB082-MB1		
1,1,2,2-Tetrachloroethane	ne	1 U	1 U	1 U	1 0	1 0		9
1,2-Dibromoethane	Y	1 U	1 U	1 D	1 0	ם ת		
Toluene		1 U	0.1 J	1 0	1			. (
Chlorobenzene		1 U	1 0	1 U	1 0			
Ethylbenzene		1 U	1 U	1 U	1 U	1 0		C
Styrene		1 U	1 0	1 0	1 U	1 0		
Xylene (total)		1 U	1 0	1 U	1 0	1 0		
1,3-Dichlorobenzene		1 0	1 U	1 0	1 U	1 0		
1,4-Dichlorobenzene		1 0	1 U	1 0	1 U	1 n		
1,2-Dichlorobenzene		1 U	1 0	1 0	1 0	1 n		
1,2-Dibromo-3-chloropropane	pane	ם	D I	1 0	1 0	1 n		
*= Outside of EPA CLP oc limits.	c limits.					4		

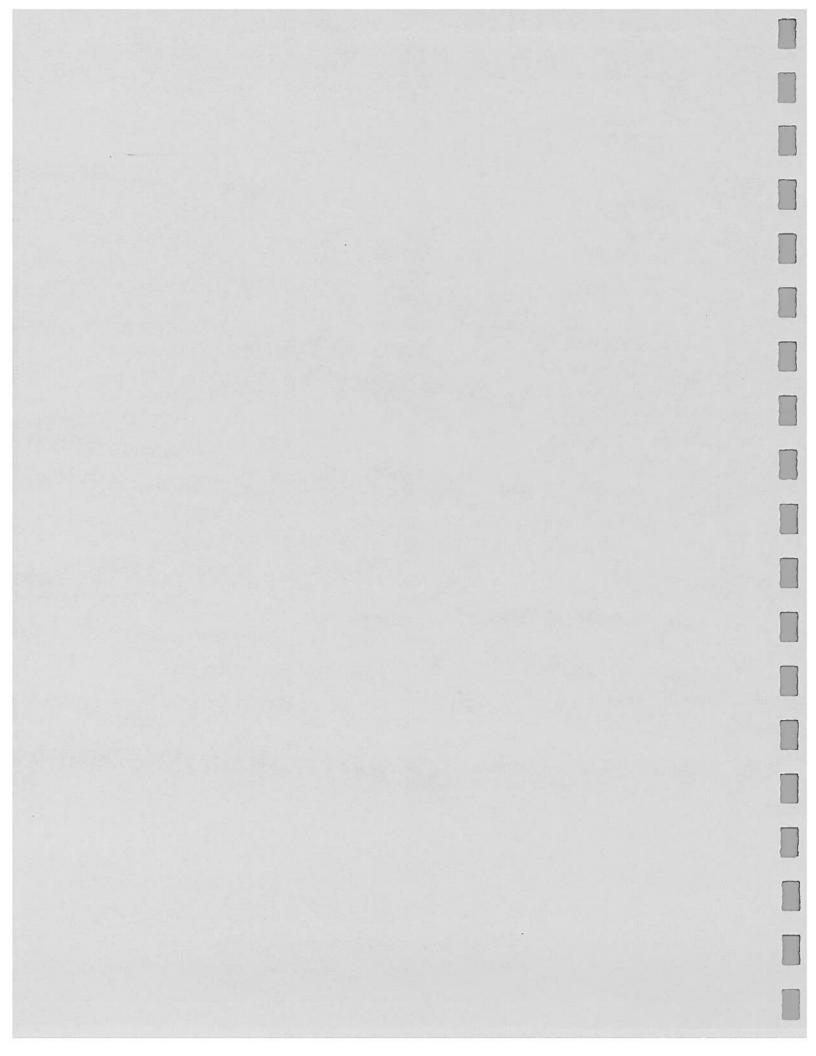
Roy F. Weston, Inc. - Lionville Laboratory VOA ANALYTICAL DATA PACKAGE FOR TCB/EAL

DATE RECEIVED: 05/04/94

RFW LOT # :9405L472

CLIENT ID	RFW #	M'	TX PREP #	COLLECTION	EXTR/PREP	ANALYSIS
						
2-GW-WM-5S	001	1	94LVX069	05/04/94	N/A	05/12/94
2-GW-WM-5M	002	1	94LVX069	05/04/94	N/A	05/12/94
2-GW-WM-5D	003	1	W 94LVX069	05/04/94	N/A	05/12/94
2-GW-WM-6M	004	1	W 94LVX069	05/03/94	N/A	05/12/94
2-GW-WM-6D	005	1	W 94LVX069	05/03/94	N/A	05/12/94
2-GW-WM-6D	005	R1 1	W 94LVX070	05/03/94	N/A	05/13/94
2-FB-WM-5D	006	1	W 94LVX070	05/04/94	N/A	05/13/94
TRIP BLANK	007	1	W 94LVB082	05/04/94	N/A	05/12/94
LAB QC:	*					
					N / D	05/12/94
VBLK	MB1		W 94LVX069	·	N/A	
VBLK	MB1		W 94LVX070		N/A	05/13/94
VBLK	MB1	1	W 94LVB082	2 N/A	N/A	05/12/94







ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL RFW #: 9405L493 W.O. #: 10535-001-001-0070-00

Date Received: 05-06-94

GC/MS VOLATILE

The set of samples consisted of seven (7) water samples collected on 05-04,05-94.

The samples were analyzed according to criteria set forth in Superfund Analytical Methods For Low Concentration Water For Organics Analysis (10/92) for Volatile target compounds on 05-12,13-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. Non-target compounds were detected in these samples.
- 2. Samples 2-GW-WM-1M and 2-DP-WM-1M required 12.5-fold dilutions because they contained high levels of target compounds.
- 3. One (1) of thirty-three (33) system monitoring compound (surrogate) recoveries was outside EPA QC limits. Sample 2-GM-WM-1M was diluted, reanalyzed on 05-13-94, and reported.
- 4. Matrix spike analyses are associated with RFW lot 9405L449.
- 5. The laboratory blanks contained the common contaminants Methylene Chloride and/or Acetone at levels less than the CRQL. The laboratory 94LVB081-MB1 also contained target compound Carbon Disulfide at a level less than the CRQL.
- 6. The internal standards and criteria contained on the Form 8s are not appropriate for this method. IS1 was 1,4-Difluorobenzene, IS2 was Chlorobenzene-_{d5} and IS3 was 1,4-Dichlorobenzene-d.

All internal standard area and retention time criteria were met.

7. Sample pH information has been reported in Section XI (Preparation Logs).

Laboratory Manager Lionville Analytical Laboratory 06,02.94.

volatiles by GC/MS

MS Report Date: 05/30/94 11:57
Work Order: 10535001001 Page: 18

Cust RJ	ID: 2-GW-WM-68	2-GW-WM-28	2-GW-WM-19	TRIP BLANK	2-GW-WM-1M	2-GW-WM-1M
1	#: 001	002	003	004	005	005 pL 3
Information Matrix:	MAT	WATER	WATER	WATER	WATER	WATER 4
		1.00	1.00	1.00	1.00	12.0
Units		ug/L	ug/L	ug/L	ug/L	O _{T/6n}
1,2-Dichloroethane-d4	d4 100 %	\$ 68	103 %	93 %	104 %	\$ 00t
Surrogate Toluene-d8	d8 95 %	\$ 86	93 %	103 %	105 %	109 %
Bromoflu	109	108		94 *	134 + %	109 %
Chloromethane	=======fl= 1 U		:fl=======f] U 1 U	1 U (1 U T	.======£1 12 U
Bromomethane	ם	ם נ	ם נ	1 U	1 U	12 U
Vinyl Chloride	ט נ	1 U	1 U	ם נ	1 U	12 U
Chloroethane	1 0	ם נ	1 U	1 U	4	12 U
Methylene Chloride	0.9 ЛВ	3 1 ЈВ	0.9 J	B 4 B	1 JB	14 JBD
Acetone	5 U	9	5 U	5 B	5 U	62 U
Carbon Disulfide	ω	4	1 U	0.2 ЈЕ	1	3 JD
1,1-Dichloroethene	1 U	1 U	ט נ	1 U	1 U	12 U
1,1-Dichloroethane	1 U	1 U	ם ד	ם ב	0.2 J	12 U
Cis-1,2-dichloroethene	1 U	1 U	ם ד	1 U	1 U	12 U
Trans-1,2-dichloroethene	ם נ	ט נ	1 U	1 U	1	12 U
Chloroform	1 U	ם נ	ם ב	0.1 J	1 U	12 U
1,2-Dichloroethane	ם ב	ם ב	ם ד	1 U	1 U	12 U
2-Butanone	5 U	5 U	5 U	5 U	5 U	62 U
Bromochloromethane	1 U	ם נ	1 U	ם ד	ם ד	12 U
1,1,1-Trichloroethane	1 0	ם נ	ם נ	1 U	1 U	12 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	. 1 U	12 U
Bromodichloromethane	ם נ	ם נ	1 U	ם ב	1 U	12 U
1,2-Dichloropropane	ם נ	ם ד	1 U	1 U	ם נ	12 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	ם נ	1 0	12 U
Trichloroethene	1 U	1 U	1 U	1 U	ם נ	12 U
Dibromochloromethane	1 0	1 U	ם ב	1 U	1 U	12 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	12 U
Benzene	1 0	ם נ	ם ב	ם ב	23	23 D
Trans-1,3-Dichloropropene	1 0	1 U	ם ב	1 U	1 U	12 U
Bromoform	ם ב	ם ב	ם ב	1 U	1 U	12 U
4-Methyl-2-pentanone	5 C	5 U	5 U	5 U	5 U	62 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	62 U
Tetrachloroethene	ם נ	ם נ	1 U	1 U	1 U	12 U
*= Outside of EPA CLP QC limits	•					

*= Outside of EPA CLP QC limits.	1,2-Dibromo-3-chloropropane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,3-Dichlorobenzene	Xylene (total)	Styrene	Ethylbenzene	Chlorobenzene	Toluene	1,2-Dibromoethane	1,1,2,2-Tetrachloroethane	RI	Cust	RFW Batch Number: 9405L493
	-											RFW#:	ID: 2	
	1 U	1 U	1 U	1 U	n t	1 U	1 U	ם נ	1 U	1 U	1 U	001	Cust ID: 2-GW-WM-69	Client: TCB/EAL
													2-GW	B/KAL
	1 U	1 U	1 U	1 U	N	ם	0.2 J	ם נ	0.2 J	1 U	ט נ	002	2-GW-WM-28	
	ם ד	1 U	ם נ	ט נ	ם נ	ם ד	ם ד	ם ד	ם ב	1 U	ם נ	003	2-GW-WM-18	Worl
	1 (ם ב	ם נ	1 1	1 1	1 [1 0			1 1		004	TRIP BLANK	rk Order: 105
	q	q	q	ਖ	G	G	q	G	4	q	٩		2	35001
	n t	20	52 E	10	2		0.1 J		۲	ם נ	1 0	005	MI-MM-TW	100
													2-G	Page
	12	18	51	9	12	12	12	300	12	12	12	10 S00	-GM-MM-TM	:: 1b
	₽	U	ט	Ą	Ϥ	G	ਖ	U	₽	ਖ	⋴	Per	-	
								(少 (01	4	6	الذا	84

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS

y GC/MS Report Date: 05/30/94 11:57 Work Order: 10535001001 Page: 2a

		0110:0:0:0 AND	1 00000				
	Cust ID: 2-	2-DP-WM-1M	2-GW-WM-1D	VBLK	VBLK	VBLK	
Sample	RFW#:	006	007	94LVB082-MB1	94LVB081-MB1	94LVX070-MB1	1 5
Information	Matrix:	WATER	WATER	WATER	WATER	WATER	
	D.F.:	12.5	1.00	1.00	1.00	1.00	
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	
1,2-Dichloroethane-d4	thane-d4	99 *	107 %	102 \$	107 %	92 *	
Surrogate To	Toluene-d8	106 %	104 %	100 %	\$ 66	109 %	
Bromoflu	obenzene	102 %	110 %	104 %	94 %	105 %	
		#	f]========f	1	[]	======================================	11 11 11 11 11 11 11
Chloromethane		12 0		4 p	· -	· -	
Bromomethane			· -		· -	4 F	
Vinyl Chloride				4 p.	- F	- F	
Methylene Chloride		10 JB	0.5 JB	1 J	ט ט	0.7 J	
Acetone			ഗ	5 U	4 J	5 U	
Carbon Disulfide			0.3 ป	ם ב	0.2 ป	1 U	
1,1-Dichloroethene			ם ד	ם ב	ט נ	ם נ	
1,1-Dichloroethane		12 U	ם נ	ם ב	1 U	1 U	
Cis-1,2-dichloroethene		12 U	ם נ	ן ט	1 U	1 U	
Trans-1,2-dichloroethene_		12 U	ם ד	1 0	1 U	ם נ	
Chloroform		12 U	ם	1 U	1 U	ם נ	
1,2-Dichloroethane		12 U	ם ד	ט ב	1 U	1 U	
2-Butanone		62 U	5 U	5 U	5 U	5 U	
Bromochloromethane		12 U	ם ד	י ד ע	1 U	1 0	
1,1,1-Trichloroethane		12 U	0.9 J	ט ב	1 U	u u	
Carbon Tetrachloride		12 U	ם נ	1	1 U	1 U	
Bromodichloromethane		12 U	0.4 J	1 0	1 0	1 U	
1,2-Dichloropropane		12 U	1 U	J 1 U	1 U	1 U	
cis-1,3-Dichloropropene		12 U	ם ד	J 1 U	1 0	1 U	
Trichloroethene		12 U	ם	ט ב ע	1 0	1 U	
Dibromochloromethane		12 U	ם ד	J 1 U	1 0	1 U	
1,1,2-Trichloroethane		12 U	1 U	J 1 U	1 0	1 U	
Benzene		23	1 U	J 1 U	1 U	1 U	
Trans-1,3-Dichloropropene		12 U	ם נ	J 1 U	1 U	1 U	
Bromoform		12 U	ם	J 1 U	1 U	1 U	
4-Methyl-2-pentanone		62 U	5 U	J 5 U	5 U	5 U	
2-Hexanone		62 U	5 U	J 5 U	5 U	5	
Tetrachloroethene		12 U	ם ב	ם ב	1 U	1 U	
*= Outside of EPA CLP QC	limits.						

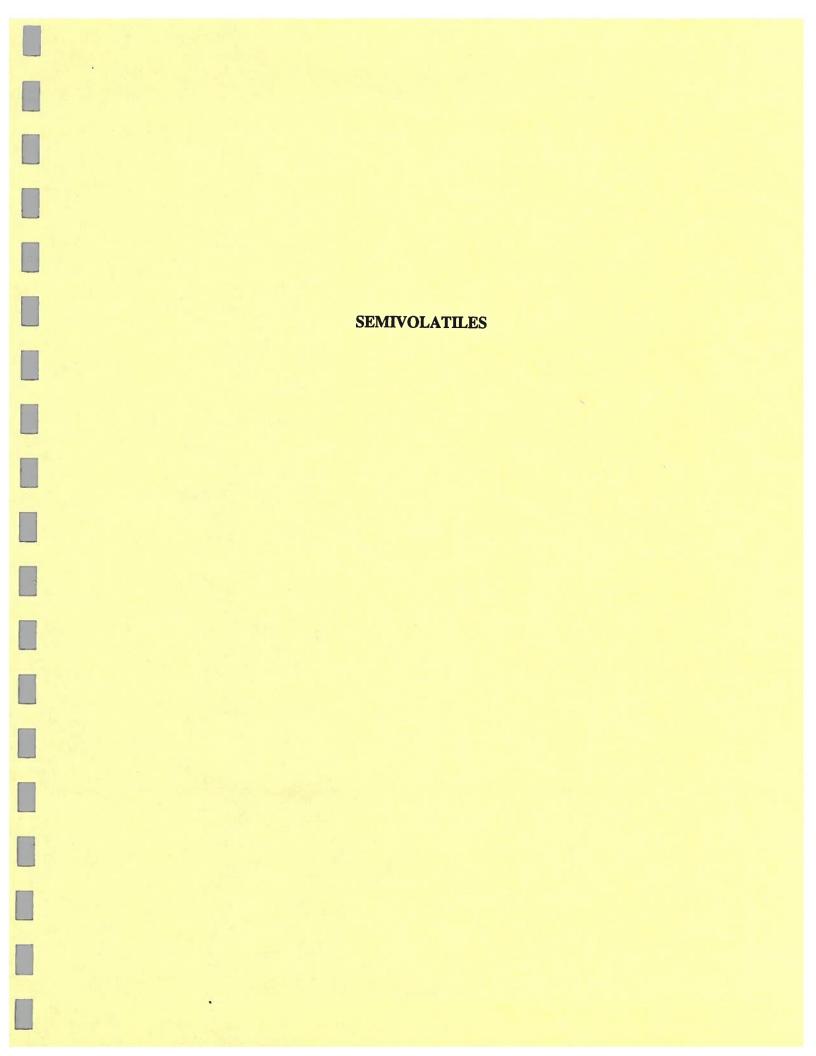
Cust ID:	Cust ID: 2-DP-WM-1M	2-GW-WM-1D	VBLK	VBLK	VBLK	
RFW#:	006	007	94LVB082-MB1	94LVB081-MB1	94LVX070-MB1	
1,1,2,2-Tetrachloroethane	12 U	1 U	ט נ	1 U	ם נ	
1,2-Dibromoethane	12 U	n t	1 U	D T	ם נ	
Toluene	_ 12 U	ם	ם ד	ם נ	ם ב	
Chlorobenzene	310	ם ד	1 U	n t	l n	
Ethylbenzene	12 U	n t	1 U	ם נ	1 U	
Styrene	_ 12 U	1 U	n t	1 U	1 U	
Xylene (total)	12 U	n t	1 U	1 U	1 U	
1 1-Dichlorohonzono	r 8	n t	1 U	1 U	1 U	
T/ J DICHIOTOPOLICALIC	51	n t	1 U	1 U	1 U	
1,4-Dichlorobenzene	_ 16	n t	1 U	n t	1 U	
1,4-Dichlorobenzene 1,2-Dichlorobenzene		1 11		1 11	1 11	

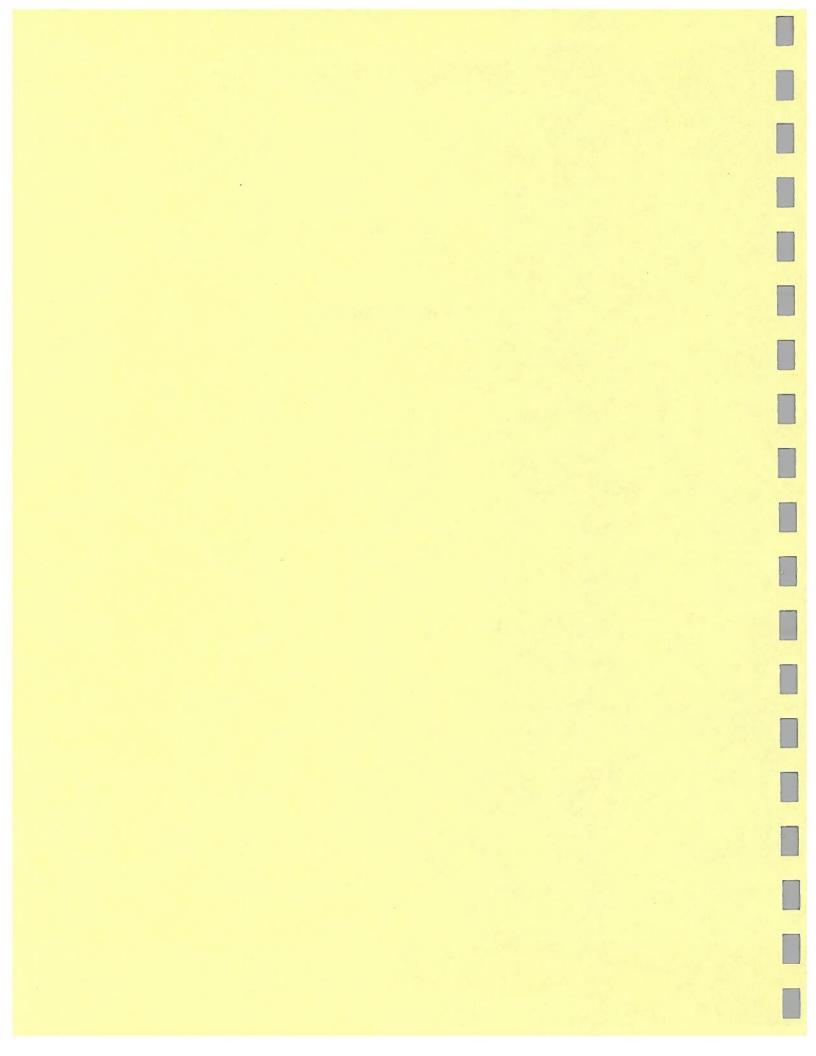
Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/06/94

RFW LOT # :9405L493

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
						05/10/01
2-GW-WM-6S	001	W	94LVB082	05/04/94	N/A	05/12/94
2-GW-WM-2S	002	W	94LVB082	05/05/94	N/A	05/12/94
2-GW-WM-1S	003	W	94LVB082	05/05/94	N/A	05/12/94
TRIP BLANK	004	W	94LVB081	05/05/94	N/A	05/12/94
2-GW-WM-1M	005	W	94LVB082	05/05/94	N/A	05/12/94
2-GW-WM-1M	005 1	01 W	94LVX070	05/05/94	N/A	05/13/94
2-DP-WM-1M	006	W	94LVX070	05/05/94	N/A	05/13/94
2-GW-WM-1D	007	W	94LVX070	05/05/94	N/A	05/13/94
LAB QC:						
VBLK	MB1	W	94LVB082	N/A	N/A	05/12/94
VBLK	MB1	W	94LVB081	N/A	N/A	05/12/94
VBLK	MB1	W	94LVX070	N/A	N/A	05/13/94







GLOSSARY OF BNA DATA

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample.

 It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aldol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y,Z = Additional qualifiers used as required are explained in the case narrative.



GLOSSARY OF BNA DATA

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

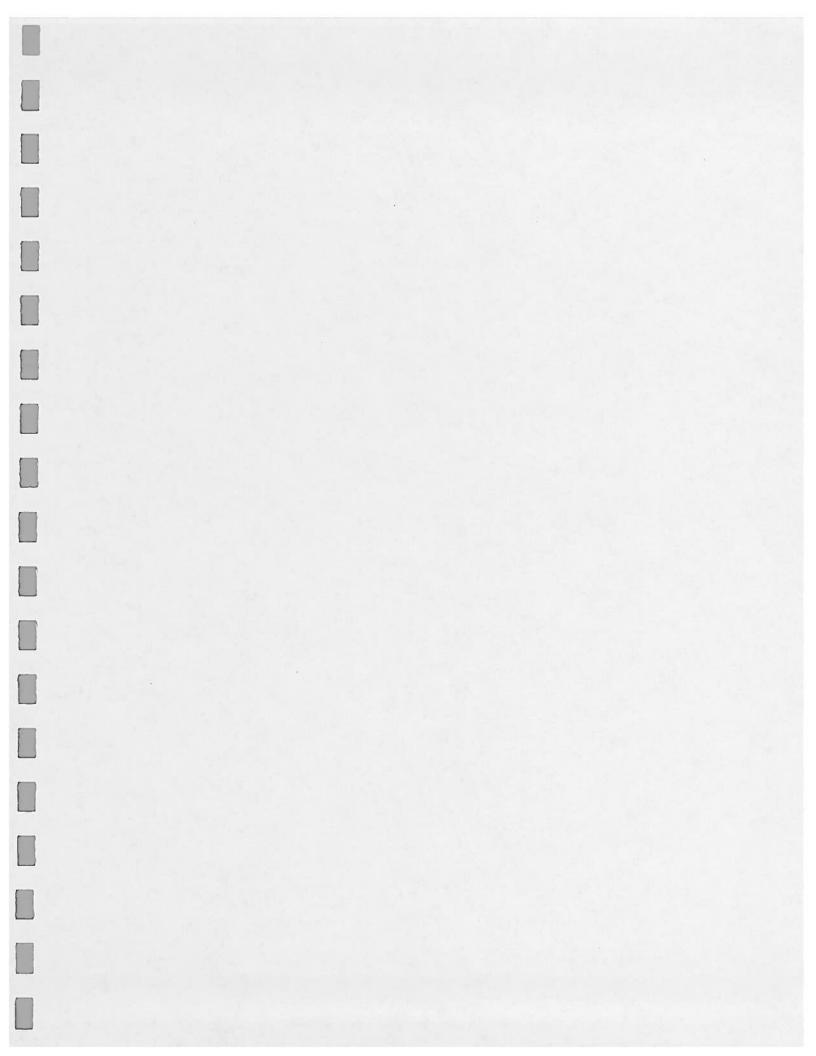


TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: manually added peak not found by automatic quan program.
- PA Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

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ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL RFW #: 9405L449 W.O. #: 10535-001-001-0070-00 Date Received: 05-03-94

SEMIVOLATILE

The set of samples consisted of eight (8) water samples collected on 05-02,03-94.

The samples were extracted on 05-06-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Semivolatile target compounds on 05-24,28,29-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. Non-target compounds were detected in these samples.
- 2. All surrogate recoveries were within EPA QC limits.
- 3. Six (6) of thirty (30) matrix spike recoveries were outside EPA QC limits.

The low out-of-limit spike recoveries were consistent between the matrix spike and matrix spike duplicate and may indicate a possible matrix effect.

- 4. Three (3) of fifteen (15) blank spike recoveries were outside EPA QC limits.
- 5. All internal standard area and retention time criteria were met.
- 6. All samples were inadvertently spiked with one-half the specified concentration of surrogate and matrix spikes. The percent (%) recoveries were adjusted accordingly.

(b) (4)

Laboratory Manager Lionville Analytical Laboratory 06.03,94.

sma/bna/05-449b.cn

Roy F. Weston, Inc. - Lionville Laboratory

Semivolatiles low concentration. Work Order: 10535001001 Page: la

Report Date: 06/01/94 13:29

Client: TCB/RAL

RFW Batch Number: 9405L449

	Cust ID: 2-GW-WM-2M	-GW-WM-2M	2-GW-WM-2D	2-GW-WM-4M	2-GW-WM-38	2-GW-WM-3M	2-GW-WM-3D
Cample	RTW#:	001	002	003	005	006	007
Information	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D. F	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	Nitrobenzene-d5	76 %	93 %	82 %	75 %	87 %	85 (4)
Surrogate	2-Fluorobiphenyl	8 69	79 %	64 %	89	73 %	74 %
Recovery	Terphenyl-d14	65	102 %	57 %	51 %	50 %	92 *
	Phenol-d5	85	104 %	96 %	94 %	69	40 %
	2-Fluorophenol	80 *	103 %	93 %	85 %	92 %	26 %
2	2,4,6-Tribromophenol	90	97 &	94 %	96	91 %	61 %
Phenol	nareleessaarreessaareessaareessaareessaareessaareessaareessaareessaareessaareessaareessaareessaareessaareessaa	O O	n 9	9 U	9 U	6 U	5 U
bis (2-Chloroethyl) ether	hyl)ether	0 B	6 U	6 U	6 U	6 U	5 U
2-Chlorophenol		6 U	6 U	6 U	6 U	6 U	5
2-Methylphenol		6 U	6 U	6 U	6 U	6 U	. v
2,2'-oxybis(1-Chloropropane)	Chloropropane)	6 U			. 6	, o	יי ני
4-Methylphenol		0 B	6 U	0.9 J	6	6	. u
N-Nitroso-di-n-propylamine	-propylamine	6 U	6 U		6 0	. 6	י ני
Hexachloroethane	ne	6 U	6 U		6	. o	, u
Nitrobenzene		6 U	6 U		6 4		ח ט
Isophorone		6 U	6 U	o	. o		n (
2-Nitrophenol_		6 U	. G	. თ	٠ <i>٠</i>	n ø	n ∪
2,4-Dimethylphenol	enol	6 U	6 U	6	, o	, o	n u
bis (2-Chloroethoxy) methane	hoxy) methane	6 U	6 U	6	. 6 :	. 6	י ני
2,4-Dichlorophenol	neno1	6 U	6 U	6 U	. 6 U	6	
1,2,4-Trichlorobenzene	obenzene	6 U	6 U	6 U	6 U	6 0	
Naphthalene		6 U	6 U	6	6 U	, 6 1 C	5
4-Chloroaniline	1e	6 U	6 U	6 U	6 U	6 0	· 5
Hexachlorobutadiene	adiene	6 U	6 U	6 U	6 U	6 0	5 C
4-Chloro-3-methylphenol	chylphenol	0 B	6 U		6 U	6 U	. v
2-Methylnaphthalene	nalene	6 U	0	6	6	6	י ני
Hexachlorocyclopentadiene	lopentadiene	6 U	6	6	, o	6	, v
2,4,6-Trichlorophenol	rophenol	6 U	6 4	O	6 4	6)
2.4.5-Trichlorophenol	rophenol	22 U	22 U	22 U	22	22 U	20 U
2-Chloronaphthalene	halene		6	6	6	6 U	5 U
2-Nitroaniline	œ		22	22	22	22 U	20 U
Dimethylphthalate	late	6 U	6 U	J 6 U	6 U	6 0	5
*= Outside of EPA	EPA CLP QC limits.						

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be separated

from Diphenylamine.

U

Outside

EPA

CLP

limits

Roy F. Weston, Inc. - Lionville Laboratory Semivolatiles low concentration.

RFW Batch Number: 9405L449 Client: TCB/KAL Report Date: 06/01/94 13:29
Work Order: 10535001001 Page: 28

EPA CLP QC limits.	2-Nitroaniline 20 U	5		68	adiene	2-Methylnaphthalene 5 U	4-Chloro-3-methylphenol 5 U	iene	4-Chloroaniline 8 * %	Naphthalene 63 %	1,2,4-Trichlorobenzene 54 %		methane	2,4-Dimethylphenol 5 U	nol	Isophorone 87 %	Nitrobenzene 5 U	Hexachloroethane 50 %	N-Nitroso-di-n-propylamine 98 %	4-Methylphenol 5 U	Chloropropane)	2-Methylphenol 5 U	2-Chlorophenol 72 %	bis(2-Chloroethyl)ether 92 %	Phenol 62 %	2,4,6-Tribromophenol 85 *		Phenol-d5 71 %		Surrogate 2-Fluorobiphenyl 78 %	Nitrobenzene-d5 95 %	Units: ug/L	D.F.: 1.00	ation Matrix: WATER	Sample RFW#: 007 MS 00	Cust ID: 2-GW-WM-3D 2-GW-	
5 C	20 U	5 U	20 U	92 %	5 U	5 U	5 U	5 U	10 * %	74 %	62 %	5 U	5 U	5 U	5 U	99 %	5 4	58 %	92 %	5 U	5 U	5 U	\$ 86	107 %	95 %		96	93	85	81 %	94 %	ug/L	1.00	WATER	007 MSD	2-GW-WM-3D	
5 U	J 20 U	5 U	20 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U			5 U		5 U	5 U	5 U	5 U	-[]====================================	90	90	#4 UTI	69	83 %	ug/L	1.00	WATER	009	2-GW-WM-48	
s G	20 U	5 U	20 U	5 U	5 U	5 U	5	5	5	· 5	, U	. 5 C	5 U	5 U	5 U	5 U	5	5	5 1 C	5	5 1	5 U	5 U	5 U	5 U		9 9) (X	9 5	72 *	84 %	ug/L	1.00	WATER	010	2-GW-WM-4D	
5 U	20 U	5	20 U	5 U	5 U	5 1	5	. G	· ·	. c	. c	. G	. 5 ! C	5	. U	. U		, u	, 5 ; C		· 5	, o	5 C	. 5 ! C	. 5 . U		0 0 0 0	9 4	e •4	44 0	81 %	ug/L	1.00	WATER	94LE0890-MB1	SBLK	
5	20 0	5 5 1 C	20 U	88	5 0	. v	. c	ı u	; a	 	1 CC 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T	, , ,	າ ຫ : c	י ני	. c	CC) '	, o	20 a		י ני		00 55	000	92	imperence f 1	9 4	91 6	100	9 00	. % . &	ug/LcJ	1.00	WATER	941E0890-MB1	SBLK BS	

2b

	5 5	5	5 U	5 U	Benzo(q,h,1)perylene
	<u></u>				
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	•	5	5 U	5 U	Dibenz (a, h) anthracene
5 5 5 5 5 5 5	U 5	5	5 U	5 U	Indeno(1,2,3-cd)pyrene
5 U 5 U	U 5	5	0 + %	0 *	Benzo (a) pyrene
5 U	U 5	5 1	5 U	5 U	Benzo(k) fluoranthene
5 U 5 U	U 5	5 -1	5 U	5 U	Benzo(b) fluoranthene
	5	5	5 U	5 U	Di-n-octyl phthalate
ر 5	J 4	N.	5 U	3 J	bis(2-Ethylhexyl)phthalate
u	U 5	5	5 U	5 U	Chrysene
G	U 5	5	5 U	5 U	Benzo (a) anthracene
d	U 5	5	5 U	5 U	3,3'-Dichlorobenzidine
5 U	U 5	5	5 U	5 U	Butylbenzylphthalate
U	U 5	5	5 U	5 U	Pyrene
G	U 5	5 1	5 U	5 U	Fluoranthene
U 5	U 5	5 -	5 U	5 U	Di-n-butylphthalate
U	U 5	55 -1	5 U	5 U	Anthracene
d	U 5	5	5 U	5 U	Phenanthrene
G	U 20	20 1	20 U	20 U	Pentachlorophenol
U 5	U 5	5 -1	94 %	80 %	Hexachlorobenzene
U 5	U 5	5 -1	5 U	5 U	4-Bromophenyl-phenylether
G	U 5		0 *	0 *	N-Nitrosodiphenylamine
U 20	U 20	20 1	20 U	20 U	4,6-Dinitro-2-methylphenol
U 20	U 20	20 1	20 U	20 U	4-Nitroaniline
5	U 5	5 1	5 U	5 U	Fluorene
Q	U 5	5 1	5 U	5 U	4-Chlorophenyl-phenylether
U 5	U 5		93 &	82 *	Diethylphthalate
U 5	U 5	5 1	69	64 %	2,4-Dinitrotoluene
U 5	U 5	5 1	5 U	5 U	Dibenzofuran
U 20	U 20	20 1	20 U	20 U	4-Nitrophenol
	U 20	20 1	20 U	20 U	2,4-Dinitrophenol
U 5	U 5	5 1	5 U	5 U	Acenaphthene
U 20	U 20	20 1	20 U	20 U	3-Nitroaniline
U	U 5	55	5 U	5 U	2,6-Dinitrotoluene
U 5					Acenaphthylene

Roy F. Weston, Inc. - Lionville Laboratory BNA ANALYTICAL DATA PACKAGE FOR TCB/EAL

DATE RECEIVED: 05/03/94

RFW LOT # :9405L449

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-2M	001	W	94LE0890	05/02/94	05/06/94	05/28/94
2-GW-WM-2D 2-GW-WM-4M	002 003	W	94LE0890 94LE0890	05/02/94 05/03/94	05/06/94 05/06/94	05/28/94 05/28/94
2-GW-WM-3S	005	W	94LE0890	05/02/94 05/02/94	05/06/94 05/06/94	05/28/94 05/28/94
2-GW-WM-3M 2-GW-WM-3D	006 007	W W	94LE0890 94LE0890	05/02/94	05/06/94	05/28/94
2-GW-WM-3D 2-GW-WM-3D	007 MS 007 MSD	W	94LE0890 94LE0890	05/02/94 05/02/94	05/06/94 05/06/94	05/28/94 05/28/94
2-GW-WM-4S	009	W	94LE0890 94LE0890	05/03/94 05/03/94	05/06/94 05/06/94	05/28/94 05/29/94
2-GW-WM-4D	010	W	941E0890	03/03/34	03/00/31	00,20,01
LAB QC:						
		••	047.770000	N/A	05/06/94	05/24/94
SBLK SBLK	MB1 MB1 BS	W	94LE0890 94LE0890	N/A	05/06/94	05/24/94

4MS 096 SAMPLE DISCREPANCY	SDR IN-PROGRESS ROUTING: (see other side)
Client TCB EAL Mar RFW Lot # 94051449, 472, 493 Pre	Category for Discrepancy: Log-In LIMS Pagency: Immediate Category for Discrepancy: Log-In LIMS Analysis/Sample Project Revision Other:
A. Reason for SDR: A1a. Requires Verification By (circle): Log-In or Prep Group Missing Sample/Extract Wrong Sample Pulled Improper Bottle Type Container Broken Preservation Wrong Received Past Hold Insufficient Sample Label ID's Illegible A1b. Re-Log: Tech Profile ErrorClient Changed Request Sampler Error on C-O-CTranscription Error Wrong Test Code, Re-Log As Re-Leach: Metals/Inorg/VOA/BNA/Pest/Herb/ Re-Digest: AA/ICP/HG/ Re-Extract: BNA/PEST/ QC Out: SURR/MSHigh/Low/<10%/Missing/2X QC Out: B/BS/BSD/LCS/LCS-DHigh/Low Hold Time Exceeded: Prep/Analysis/Report Not Amenable to Analysis Other (describe) OUL Samples were Spiked were spiked were spiked were spiked was spiked were spiked was spiked was spiked. MA trix Spikes, will adjust and note in the narrative	the respycijes
C. FINAL ACTION: a clear description of what was done to when it was done, and by whom it was a Action Taken: Revision To Chain-of-Custody Completed LIMS Corrections Completed Other. explain Theoreet volume of low a surrogate and spike. STD mixes used due to incomplete instance on analysts daily work schedule. Action Protective action taken.	X Initiator: X Lab Manager: Y Project Mgr: X Unit Leader: X QA (original): Log-In: Data Reportin
Action By (name/date): Dina Dec - mensal Forward to Pat Feldman. QA for distribution	Distributed By: (signature/date) S. P. D. D. D. D.

44m5100 SAMPLE DISCREPANCY REPORT (SDR) SDR IN-PROGRESS ROUTING (see other side) Category for Discrepancy: Initiator Log-in Parameter: -31-44 Date LIMS TEBIEAL Matrix: Client x Analysis/Sample Prep Batch: Gull 4405-6443 RFW Lot # Project Revision Urgency: 0344-17151S Samples Immediate / Other Other: **B. PM Instructions For** Disposition (signature/date); A. Reason for SDR: A2. A1a. Verified By (circle): Requires Verification By (circle): Log-in or Prep Group Subout Analysis Log-in or Prep Group (signature) (date) Take Off Hold Place On Hold Missing Sample/Extract Change W.O. # to: if enough sample: ORG/INORG Wrong Sample Pulled MS/MSD on Sample if enough sample: ORG/INORG Improper Bottle Type MS/DUP on Sample Container Broken Change Client name to: Preservation Wrong Wrong Test Code, Re-Log As ✓ Include in Narrative Received Past Hold Insufficient Sample Label ID's Illegible Other, explain: A1b. Re-Log: Tech Profile Error..Client Changed Request.. Sampler Error on C-O-C..Transcription Error.. Wrong Test Code, Re-Log As Re-Leach: Metals/Inorg/VOA/BNA/Pest/Herb/ Re-Digest: AA/ICP/HG/ Dina - plean investigat Re-Extract: BNA/PEST/ QC Out: SURR/MS...High/Low/<10%/Missing/2X QC Out: B/BS/BSD/LCS/LCS-D...High/Low Hold Time Exceeded: Prep/Analysis/Report Le JOR 94 m5 04 9 Not Amenable to Analysis X Other (describe) Low surrogate and spike recoveries in sur (8844-ms/s) 135% lost During extraction (character (character) (ch See otrated forme 2.3 Bank Spike as BS. D. Distribution of Completed SDR (include name C. FINAL ACTION: a clear description of what was done for resolution. when it was done, and by whom it was done X Initiator: Action Taken: X Lab Manager: Revision To Chain-of-Custody Completed X Project Mgr: Dure appears to have been a loss of extract during the ortology press. Noted in servature or oli lay blank if he deplicate ancelled Action By married **LIMS Corrections Completed** Unit Leader: X QA (original): Log-in: Data Reportit

Billing: ,

Distributed By:

(signature/date)

ist chilax

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Forward to Pat Feldman. QA for distribution







ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL RFW #: 9405L472 W.O. #: 10535-001-001-0070-00 Date Received: 05-04-94

SEMIVOLATILE

The set of samples consisted of six (6) water samples collected on 05-03,04-94.

The samples were extracted on 05-06-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Semivolatile target compounds on 05-24-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. Non-target compounds were detected in these samples.
- 2. All surrogate recoveries were within EPA QC limits.
- 3. Matrix spike analyses are associated with RFW lot 9405L449.
- 4. Three (3) of fifteen (15) blank spike recoveries were outside EPA QC limits.
- 5. All samples were inadvertently spiked with one-half the specified concentration of surrogate and matrix spikes. The percent (%) recoveries were adjusted accordingly.
- 6. All internal standard area and retention time criteria were met.

(b) (4)

Laboratory Manager Lionville Analytical Laboratory

sma/bna/05-472b.cn

06,01,94 Date

Roy F. Weston, Inc. - Lionville Laboratory Semivolatiles low concentration.

Client: TCB/EAL Report Date: 05/31/94 08:14
Work Order: 10535001001 Page: 1a

RFW Batch Number: 9405L472	ber: 9405L472	Client: TCB/EAL	B/RAL	Work	Order: 10535001001	Page:	la
	Cust ID:	2-GW-WM-58	2-GW-WM-5M	2-GW-WM-5D	4.	2-GW-WM-6D	2-FB-WM-5D
Sample	RFW#:	001	002	003	004	005	006
Information	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	Nitrobenzene-d5	8 69	76 %	76 %	74 %	76 %	81
Surrogate	2-Fluorobiphenyl	70 %	73 %	60 %	67 %	72 %	89
Recovery	Terphenyl-d14	43 8	67 %	38 %	72 %	67 %	105
7	Phenol-d5	8 8	89 %	78 %	92 %	63 %	80
	2-Fluorophenol	75 %	82 %	84 %	80 %	80 %	90
* 3. U. I.	2,4,6-Tribromophenol	89			88	90 %	90
Phenol		# # # # # # # # # # # # # # # # # # #	L S C	n 9 Taenbackerent	O O	7	9 =====================================
bis (2-Chloroethyl) ether	thyl)ether	5 4	5 U	9 U	6 U	5 U	6
2-Chlorophenol	1	5 4	5 U	6 U	6 U	5 U	6
2-Methylphenol	1	5 4	5 U	6 0	6 U	5 U	6
2,2'-oxybis(1	2,2'-oxybis(1-Chloropropane)	5 U	55 U	6 0	6 U	5 U	6
4-Methylphenol	1	5 4	5 U	0 U	6 U	5 U	6
N-Nitroso-di-	N-Nitroso-di-n-propylamine	_ 5 U	5 U	6 U	6 U	5 U	6
Hexachloroethane	ane	5 U	5 U	6 U	6 U	5 U	. თ
Nitrobenzene		5 U	5 U	6 U	6 U	5 U	6
Isophorone		5 4	5 U	6 U	6 U	5 U	0
2-Nitrophenol		5 U	5 U	6 U	6	. 5 U	6
2,4-Dimethylphenol	henol	5 U	5 U	6 U	6 U	5 U	6
bis (2-Chloroe	bis(2-Chloroethoxy)methane	5 U	5 U	6 U	6 U	5 U	6
2,4-Dichlorophenol	henol	5 U	5 U	6 4	6 U	5 U	0
1,2,4-Trichlorobenzene	robenzene	5 4	7 5 U	6 U	6 U	5 U	6
Naphthalene		5 U	5 U	6 U	6 U	5 U	6
4-Chloroaniline	ne	5 U	7 5 U	6 U	6 U	5 U	6
Hexachlorobutadiene	adiene	5 U	J 5 U	. 6 U	6 U	5 U	6
4-Chloro-3-methylphenol	thylphenol	5 U	J 5 U	6 U	6 U	5 U	6
2-Methylnaphthalene	halene	5 U	J 5 U	6 U	6 0	5 U	6
Hexachlorocyclopentadiene	lopentadiene		J 5 U	6 11	6 U	5 U	6
2,4,6-Trichlorophenol	rophenol	5 U	J 5 U	6 U		5 U	6
2,4,5-Trichlorophenol	rophenol	20 U	J 20 U	22 U	7 22 U	20 U	22
2-Chloronaphthalene	halene	1 5 U	J 5 U	6 U		5 U	o
2-Nitroaniline	10	20 U	J 20 U	22	7 22 U	20 U	22
Dimethylphthalate	late	5 U		6 U		5 U	6

*= Outside of EPA CLP QC limits.

Accele aphth by Jenne 5 01 5 02 03 004 005 006	RFW Bacch Number: 9405144/2 CI	: 2-GW-WM-59	2-GW-WM-5M	2-GW-WM-5D	2-GW-WM-6M	2-GW-WM-6D	2-FB-WM-5D
Deliverie	RFW#:	001	002	003	004	005	006
olumne 5 U 5 U 5 U 6 U 5 U 2 U <td>Acenaphthylene</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Acenaphthylene						
ne 20<	2,6-Dinitrotoluene						_
S U S U	3-Nitroaniline						22 U
hencol 20 20 20 20 20 20 20 22 0 22 0 22 0 22 0 22 0 22 0 22 0 22 0 22 0 22 0 22 0 20 0 22 0 20 0 22 0 20 0 22 0 20 0 22 0 22 0 22 0 22 0 22 0 3 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 2 0 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0	Acenaphthene						
1 1 20 20 20 20 20 20	2,4-Dinitrophenol						
Internet S U	4-Nitrophenol						
5 U 5 U 6 U <td>Dibenzofuran</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Dibenzofuran						
ther 5 U 5 U 6 U 6 U 5 U 6 U 6 U 5 U 6 U 6 U	2,4-Dinitrotoluene		-				
ther 5 U 5 U 6 U 6 U 5 U 6 U 6 U 6 U 6 U 6 U	Diethylphthalate						
5 U 20 U 22 U 22 U 22 U 22 U 22 U 22 U 2	4-Chlorophenyl-phenylether						
20 U 20 U 22 U 22 U 22 U 20 U 20 U 22 U 20 U 20 U 22 U 20 U 20 U 22 U 20 U 22 U 20 U 22 U 20 U 22 U 20 U 22 U 20 U 22 U 20 U 22 U 20 U 2	Fluorene						
emol 20 U 20 U 22 U 20 U 2	4-Nitroaniline						
her 5 U 5 U 6 U 6 U 5 U 6 U 5 U 6 U 5 U 6 U 6	4,6-Dinitro-2-methylphenol						
her 5 U 5 U 6 U 6 U 5 U 6 U 22 U 22 U 22 U	N-Nitrosodiphenylamine						
S U S U	4-Bromophenyl-phenylether						
20 U 20 U 22 U 22 U 20 U 21 U 22 U 20 U 22 U 5 U 6 U 6 U 6 U 5 U 6 U 6 U 5 U 6 U 6	Hexachlorobenzene		-				
te	Pentachlorophenol						
5 U 5 U 6 U 6 U 5 U 6 U 6 U 6 U 6 U 6 U	Phenanthrene		-				
5 U 5 U 6 U 6 U 5 U 6 U 7 1	Anthracene						
5 U 5 U 6 U 6 U 5 U 6 U 6 U 6 U 6 U 6 U	Di-n-butylphthalate	-	-		_		
5 U 5 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U	Fluoranthene		5 U		_		
100 5 U 5 U 6 U 6 U 6 U 6 U 6 U 5 U 6 U	Pyrene	5 U	5 U	6 U		5 U	
ne 5 U 5 U 6 U 6 U 5 U 6	Butylbenzylphthalate	5 U	5 U	0 U		5 U	
1ate 5 U 6 U 6 U 5 U 6 U 14te 5 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U	3,3'-Dichlorobenzidine	5 U	5 U	6 U		5 U	
S U S U G U G U S U G	Benzo (a) anthracene	5 U	5 U	6 U		5 U	6 U
y1)phthalate 2 J 5 U 6 U 6 U 5 U 6 U halate 5 U 5 U 6 U 6 U 5 U 6 U nthene 5 U 5 U 6 U 6 U 5 U 6 U nthene 5 U 5 U 6 U 6 U 5 U 6 U d)pyrene 5 U 5 U 6 U 6 U 5 U 6 U s U 5 U 6 U 6 U 5 U 6 U s U 5 U 6 U 6 U 5 U 6 U s U 5 U 6 U 6 U 5 U 6 U	Chrysene	5 U	5 U	6 U		5 U	6 U
halate 5 U 5 U 6 U 6 U 5 U 6 nthene 5 U 5 U 6 U 6 U 5 U 6 nthene 5 U 5 U 6 U 6 U 5 U 6 d)pyrene 5 U 5 U 6 U 6 U 5 U 6 hracene 5 U 5 U 6 U 6 U 5 U 6 rylene 5 U 5 U 6 U 6 U 5 U 6	bis (2-Ethylhexyl)phthalate	้ 2 ป	. S U	6 U	6 U	5 U	6 U
nthene 5 U 5 U 6 U 6 U 5 U 6 nthene 5 U 5 U 6 U 6 U 5 U 6 d)pyrene 5 U 5 U 6 U 6 U 5 U 6 hracene 5 U 5 U 6 U 6 U 5 U 6 rylene 5 U 5 U 6 U 6 U 5 U 6	Di-n-octyl phthalate	5 U	5 U	6 U	6 U	5 U	6 U
nthene 5 U 5 U 6 U 6 U 5 U 6 d)pyrene 5 U 5 U 6 U 6 U 5 U 6 hracene 5 U 5 U 6 U 6 U 5 U 6 rylene 5 U 5 U 6 U 6 U 5 U 6	Benzo(b)fluoranthene	5 U	•	6 U	6 U	5 U	6 U
S U S U 6 U 6 U 5 U 6 U 6 U 5 U 6 U 6 U 5 U 6 U 6	Benzo(k)fluoranthene	5 U	•	6 U	6 U	5 U	6 0
d)pyrene 5 U 5 U 6 U 6 U 5 U 6 U 5 U 6 U 5 U 6 U 5 U 6 U 5 U 6 U 5 U 6 U 6 U 5 U 6 U 6 U 5 U 6 U 6 U 6 U 5 U 6 U 6 U 6 U 6 U 5 U 6 U	Benzo(a)pyrene			6 U	0 U	5 U	6 U
5 U 6 U 6 U 5 U 6	Indeno (1, 2, 3-cd) pyrene	5 U		6 U	6 U	5 U	6 U
5 U 5 U 6	Dibenz (a, h) anthracene	5 U	•	6 U	6 U	5 U	6 U
	Dangala h ilnarylana	ĺ		6 U	6 U	5 U	6 U

Roy F. Weston, Inc. - Lionville Laboratory Semivolatiles low concentration.

RFW Batch Number: 9405L472 Client: TCB/KAL Report Date: 05/31/94 08:14
Work Order: 10535001001 Page: 2a

0

0

15

Cust ID:	SBLK	SBLK BS			i#	 -
Sample RFW#:	94LE0890-MB1	94LE0890-MB1				*
ation Ma	WATER	WATER				0
	1.00	1.00				
Units:	ug/L	ug/L				
Nitrobenzene-d5	81 %	85 %				
Surrogate 2-Fluorobiphenyl	49 %	63 %				
	98	99				
	93	100 %				
2-Fluorophenol	88	91 %				
2,4,6-Tribromophenol	87 %	90 %				
Phenol	n s [j=========	,=======fl== == fl=======================	=======f]	=====[]=====		13======
bis(2-Chloroethyl)ether		88				
2-Chlorophenol	5 U	85				
2-Methylphenol	5 4	5 U				
2,2'-oxybis(1-Chloropropane)	5 4	5 U				
4-Methylphenol	5 U	5 U				
N-Nitroso-di-n-propylamine	5 U	102 %				
Hexachloroethane		36				
NI CI ODEIIZEIIE	n 0	8 U				
2-Nitrophenol	5 0	5 U				
2,4-Dimethylphenol	•	5 U				
bis(2-Chloroethoxy)methane	5 4	5 U				
2,4-Dichlorophenol	. 5 U	5 U				
1,2,4-Trichlorobenzene	5 U	38 * %				
Naphthalene	5 U	46 * %				
4-Chloroaniline	_ 5 U	11 + %				
Hexachlorobutadiene		5 U				
4-Chloro-3-methylphenol	5 U	5 U				
2-Methylnaphthalene		5 U				
Hexachlorocyclopentadiene	5 U	5 U				
2,4,6-Trichlorophenol	5 U	88				
2,4,5-Trichlorophenol		20 U				
2-Chloronaphthalene		5 U				
2-Nitroaniline	20 U	20 U				
Dimethylphthalate	- 5 U	5 U				
the Control of The Cart of The Cart						

*= Outside of EPA CLP QC limits.

RFW#: 94LE0890-MB1 94LE0890-MB1

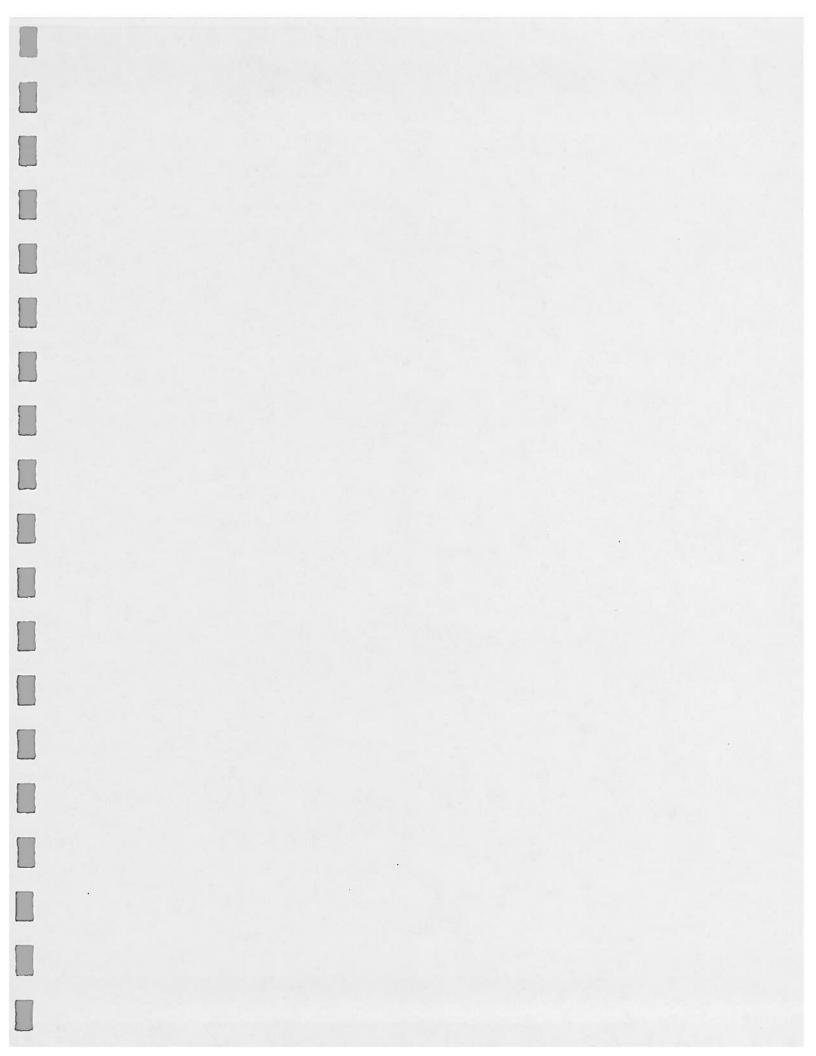
ĭ	ď	₅	Ϥ	ű	Dibenz (a, h) anthracene
J	٠.	ហ	d	رن ن	Indeno(1,2,3-cd)pyrene
or.	alp.	81	ď	5	Benzo (a) pyrene
J	_	S	q	ហ	Benzo(k) fluoranthene
J	<u>.</u>	5	q	5	Benzo(b) fluoranthene
J	ď	5	ਖ	ហ	Di-n-octyl phthalate
4	d	G	q	ហ	bis(2-Ethylhexyl)phthalate
J	ď	S	ď	₅	Chrysene
J	Ċ	S	ਖ	_U	Benzo (a) anthracene
-	d	5	ď	₅	3,3'-Dichlorobenzidine
J	ď	₅	q	S	Butylbenzylphthalate
4	ď	5	ਖ	₅	Pyrene
-	ď	₅	ਖ	IJ	Fluoranthene
- i	ď	_U	ਖ	ហ	Di-n-butylphthalate
J	ď	5	ਖ	5	Anthracene
4	ď	5	ਖ	ហ	Phenanthrene
4	_ 	20	ч	20	Pentachlorophenol
от	dР	83	ч	₅	Hexachlorobenzene
J	<u> </u>	5	ਖ	₅	4-Bromophenyl-phenylether
er	æ	53	ч	Ŋ	N-Nitrosodiphenylamine
J	_	20	ਖ	20	4,6-Dinitro-2-methylphenol
4		20	ਖ	20	4-Nitroaniline
J	d	5	ਖ	s	Fluorene
J	d	5	d	5	4-Chlorophenyl-phenylether
- ₹	alp.	84	ч	ហ	Diethylphthalate
अर	æ	71	ਖ	ហ	2,4-Dinitrotoluene
	ď	5	ч	5	Dibenzofuran
J	ď	20	d	20	4-Nitrophenol
J	_	20	ч	20	2,4-Dinitrophenol
J	_	S	ч	ហ	Acenaphthene
J	٦	20	U	20	3-Nitroaniline
Ĵ	₫	5	ਖ	5	2,6-Dinitrotoluene
-	<u>.</u>	S	U	ហ	Acenaphthylene

Roy F. Weston, Inc. - Lionville Laboratory BNA ANALYTICAL DATA PACKAGE FOR TCB/EAL

DATE RECEIVED: 05/04/94

RFW LOT # :9405L472

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-5S	001	W	94LE0890	05/04/94	05/06/94	05/24/94
2-GW-WM-5M	002	W	94LE0890	05/04/94	05/06/94	05/24/94
2-GW-WM-5D	003	W	94LE0890	05/04/94	05/06/94	05/24/94
2-GW-WM-6M	004	W	94LE0890	05/03/94	05/06/94	05/24/94
2-GW-WM-6D	005	W	94LE0890	05/03/94	05/06/94	05/24/94
2-FB-WM-5D	006	W	94LE0890	05/04/94	05/06/94	05/24/94
LAB QC:						
SBLK	MB1	W	94LE0890	N/A	05/06/94	05/24/94
SBLK	MB1 BS	W	94LE0890	N/A	05/06/94	05/24/94







ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL RFW #: 9405L493 W.O. #: 10535-001-001-0070-00 Date Received: 05-06-94

SEMIVOLATILE

The set of samples consisted of six (6) water samples collected on 05-04,05-94.

The samples were extracted on 05-09-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Semivolatile target compounds on 05-30,31-94 and 06-01-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. Non-target compounds were detected in these samples.
- 2. All surrogate recoveries were within EPA QC limits.
- 3. Matrix spike analyses are associated with RFW lot 9405L449.
- 4. Three (3) of fifteen (15) blank spike recoveries were outside EPA QC limits.

The blank spike duplicate (94LE0894-MB1 BSD) was lost during the extraction process.

- 5. The laboratory blank contained the common contaminants Di-n-butylphthalate and Bis(2-ethylhexyl)phthalate at levels less than 5x the CRQL.
- 6. All internal standard area and retention time criteria were met.
- 7. All samples were inadvertently spiked with one-half the specified concentration of surrogate and matrix spikes. The percent (%) recoveries were adjusted accordingly.

(b) (4)

06.03,94. Date

Laboratory Manager
Lionville Analytical Laboratory

sma/bna/05-493b.cn

Roy F. Weston, Inc. - Lionville Laboratory Semivolatiles low concentration.

Client: TCB/EAL Work Order; 10535001001 Page; la

Report Date: 06/01/94 17:12

RFW Batch Number: 94051493

o c	a C	•	o	c	u	о С		σ C	ļ	Outside of EPA CLP QC limits.	<pre>#= Outside of EPA</pre>
6 11	. :	: (, ;	: 0	1 6		t		ŀ	11116	N-M-CLOGME.
22 U	24 U	=	22	=	20		22		ı	iline	2-Nitroaniline
0 0	0 U	□	6	ਖ	ъ	0 U		0 U		aphthalene	2-Chloronaphthalene
22 U	24 U	□	22	ď	20	2 U	22	26 U		2,4,5-Trichlorophenol	2,4,5-Tricl
6 U	6 U	□	0	۵	ហ	D 9		0 U	I	2,4,6-Trichlorophenol	2,4,6-Tricl
6 U	0 0	□	0	U	_U	n 9		6 U	ı	Hexachlorocyclopentadiene	Hexachloro
6 U	0 0	□	0	₽	₅	O O		0 0		aphthalene	2-Methylnaphthalene
6 U	6 U	□	6	ч	51	Q Q		0 U	1	4-Chloro-3-methylphenol	4-Chloro-3
6 U	0 U	□	6	₽	σ	0 0		6 U	1	butadiene	Hexachlorobutadiene
6 U	0 U	□	6	ਖ	σ	G		0 0	1	niline	4-Chloroaniline
6 U	0 U	□	6	₽	ហ	G G		0 0	ı	10	Naphthalene
6 U	6 U	₽	6	ď	Ŋ	O O		6 U	•	1,2,4-Trichlorobenzene	1,2,4-Trich
6 U	1 J	4	- 4	₽	ហ	6 U		0 U	'	prophenol	2,4-Dichlorophenol
6 U	6 U	q	6	₽	ហ	0 0		0 0		bis (2-Chloroethoxy) methane	bis (2-Chlor
6 U	6 U	◘	6	G	ű	n 9		0 U	•	ylphenol	2,4-Dimethylphenol
6 U	6 4	□	6	ਖ	ហ	O U		0 0	•	nol	2-Nitrophenol
6 U	6 U	q	6	ਖ	5	Q		0 U			Isophorone_
6 U	6 U	ਖ	6	d	ហ	و 0		6 U		ne	Nitrobenzene
6 U	6 U	□	6	q	5	9 0		0 U	1	ethane	Hexachloroethane
6 U	6 U	q	6	₽	₅	0 U		0 0	ŀ	N-Nitroso-di-n-propylamine	N-Nitroso-d
6 U	6 U	q	6	d	ហ	19-	24	6	1	enol	4-Methylphenol
6 U	6 U	q	6	q	ហ	Q Q		0 U	1	2,2'-oxybis(1-Chloropropane)	2,2'-oxybis
6 U	6 U	q	6	d	υī	Ω 9		0 U		enol	2-Methylphenol
0 U	5 4	4	ហ	ਖ	5	0 0		0 U		enol	2-Chlorophenol
6 U	6 U	q	6	U	G	□ 0		0 U		bis (2-Chloroethyl) ether	bis (2-Chlor
6 U	2 J	ч	2	₽	ហ	2 ਹ		6 U			Phenol
========f1		£1==		=f1=		==fl=		fl	11 11 11 11 11 11		
98	98 *	œ	107	₩	99	ж	104	94 %		2,4,6-Tribromophenol	
85	88	œ	98	40	93	dР	92	87 %		2-Fluorophenol	
76 %	96	o to	104	æ	96	æ	102	24 %		Phenol-d5	
76 %	96	оfь	99	ďP	95	оф	52	83 %		Terphenyl-d14	Recovery
73 %	82 *	œ	86	оф	79	оф	78	72 %		2-Fluorobiphenyl	Surrogate
% 08	\$ 88	96	98	40	89	op	88	84 %		Nitrobenzene-d5	
ng/L	ug/L		ug/L		ug/L	Ļ	ug/L	ug/L		Units:	
1.00	1.00		1.00	0	1.00	1.00		1.00		D.F.:	
WATER (1)	WATER		WATER		WATER	~	WATER	WATER	WA	n Matrix:	Information
007	006		005		003	ŭ	002	001		RFW#:	Sample
6											
2-GW-WM-1D	2-DP-WM-1M	N	2-GW-WM-1M		2-GW-WM-18		2-GW-WM-28	M-68	2-GW-WM-68	Cust ID:	

	RFW#:	100	002	003	005	006	007
Conanht hullon				1		- 1	
2,6-Dinitrotoluene		o o		თ ი ქ ი			
3-Nitroaniline		26 U	22 U				
Acenaphthene							
2,4-Dinitrophenol		26 U	22 U	20 U			
4-Nitrophenol		26 U		20 U			
Dibenzofuran		6 U	6 U	5 U			
2,4-Dinitrotoluene		6 U	0 0	5 U			
Diethylphthalate	=	6 U	6 U	5 U			
4-Chlorophenyl-phenylether	ther	6 U	6 U	5 U			
Fluorene		6 U	6 U	5 U			
4-Nitroaniline		26 U		20 U			
4,6-Dinitro-2-methylphenol	enol	26 U		20 U			
N-Nitrosodiphenylamine		6 U	6 U	5 U			
4-Bromophenyl-phenylether	her	6 U	۵ 6	5 U			
Hexachlorobenzene		6 U	6 U	5 U			
Pentachlorophenol		26 U		20 U			
Phenanthrene		6 U	6 U	5 U			
Anthracene		6 U	6 U	5 U			
Di-n-butylphthalate	in in	1 JB	1 ЈВ	1 JB	1 JB	1 ЈВ	2 JB
Fluoranthene		0 U	6 U	. 5 U			
Pyrene		6 U	6 U	5 U			
Butylbenzylphthalate		6 U	6 U	5 U			
3,3'-Dichlorobenzidine		6 U	6 U	5 U			
Benzo (a) anthracene		0 U	6 U	5 U			
Chrysene		0 U	6 U	55 U			
bis (2-Ethylhexyl) phthalate	late	1 ЛВ	4 JB	1 JB			
Di-n-octyl phthalate		0 U	6 U	S U			
Benzo(b)fluoranthene_		0 U	0 0	5 U			
Benzo (k) fluoranthene		0 O	0 0	5 U			
Benzo (a) pyrene		6 U	6 U	5 U			
Indeno(1,2,3-cd)pyrene		6 U	0 0	5 U			
Dibenz (a, h) anthracene		و و	6 U	5 U			
Benzo(g,h,i)perylene_		6	6 U	5 U			
(1) - Cannot be separated	from	Diphenylamine. *=	Outside of EPA	CLP QC limi	•		
(1) - Cannot be separa	from	* (Outs	of d	of EPA CLP QC limi	of EPA CLP QC limits.	of EPA CLP QC limits.

COIVA

2-GW-WM-1D

Roy F. Weston, Inc. - Lionville Laboratory Semivolatiles low concentration.

RFW Batch Number: 94051493 Client: TCB/EAL Work Order: 10535001001 Page: 28 Report Date: 06/01/94 17:12

			*= Outside of EPA CLP OC limits.
	s G	5 U	Dimethylphthalate
	20 U	20 U	2-Nitroaniline
	5 U	- 5 U	2-Chloronaphthalene
		_ 20 U	2,4,5-Trichlorophenol
	89	5 U	2,4,6-Trichlorophenol
	- G		Hexachlorocyclopentadiene
			2-Methylnaphthalene
		· 5	4-Chloro-3-methylphenol
	י ני		Hexachlorobutadiene
	44	· 5	4-Chloroaniline
		5 U	Naphthalene
	80	5	1,2,4-Trichlorobenzene
	5 U	5 U	2,4-Dichlorophenol
	. 5	5 U	bis (2-Chloroethoxy) methane
	. S	5 U	2,4-Dimethylphenol
	5 U	5 U	2-Nitrophenol
	96	5 U	Isophorone
	5 U	5 U	Nitrobenzene
	60 UT	5 U	Hexachloroethane
	100	5	N-Nitroso-di-n-propylamine
	5	5 U	4-Methylphenol
	5 U	5 0	2,2'-oxybis(1-Chloropropane)
	5 U	5 U	2-Methylphenol
	103 %	5 U	2-Chlorophenol
	105 %	5 U	bis (2-Chloroethyl) ether
	103 %	5 U	
	es (Janesanes same A COT	7.	2,4,6-Tribromophenol
	TO7 9	2	2-Fluorophenol
	- CQ) d	Phenot-d5
	100	100	Recovery Terphenyl-d14
	92	80	Surrogate 2-Fluorobiphenyl
	97 %	89	Nitrobenzene-d5
	•		
	ug/L	ug/L	Units:
C	1.00	1.00	
0	WATER	WATER	Information Matrix:
	94LE0894-MB1	94LE0894-MB1	Sample RFW#: !
El men.			
5	SBLK BS	SBLK	Cust ID:

Work Order: 10535001001 Page: 2b

RFW#: 94LE0894-MB1 94LE0894-MB1

⁽T) LP QC limits.

Roy F. Weston, Inc. - Lionville Laboratory BNA ANALYTICAL DATA PACKAGE FOR TCB/EAL

RFW LOT # :9405L493 DATE RECEIVED: 05/06/94 PREP # COLLECTION EXTR/PREP **ANALYSIS** CLIENT ID RFW # MTX 05/30/94 05/09/94 001 94LE0894 05/04/94 2-GW-WM-6S 05/30/94 W 94LE0894 05/05/94 05/09/94 002 2-GW-WM-2S 94LE0894 05/05/94 05/09/94 05/30/94 003 2-GW-WM-1S 05/09/94 05/30/94 05/05/94 94LE0894 005 2-GW-WM-1M 05/05/94 05/09/94 05/31/94 94LE0894 2-DP-WM-1M 006 05/09/94 06/01/94 94LE0894 05/05/94 007 2-GW-WM-1D LAB QC:

94LE0894

94LE0894

MB1

MB1 BS

SBLK

SBLK

N/A

N/A

06/01/94

05/31/94

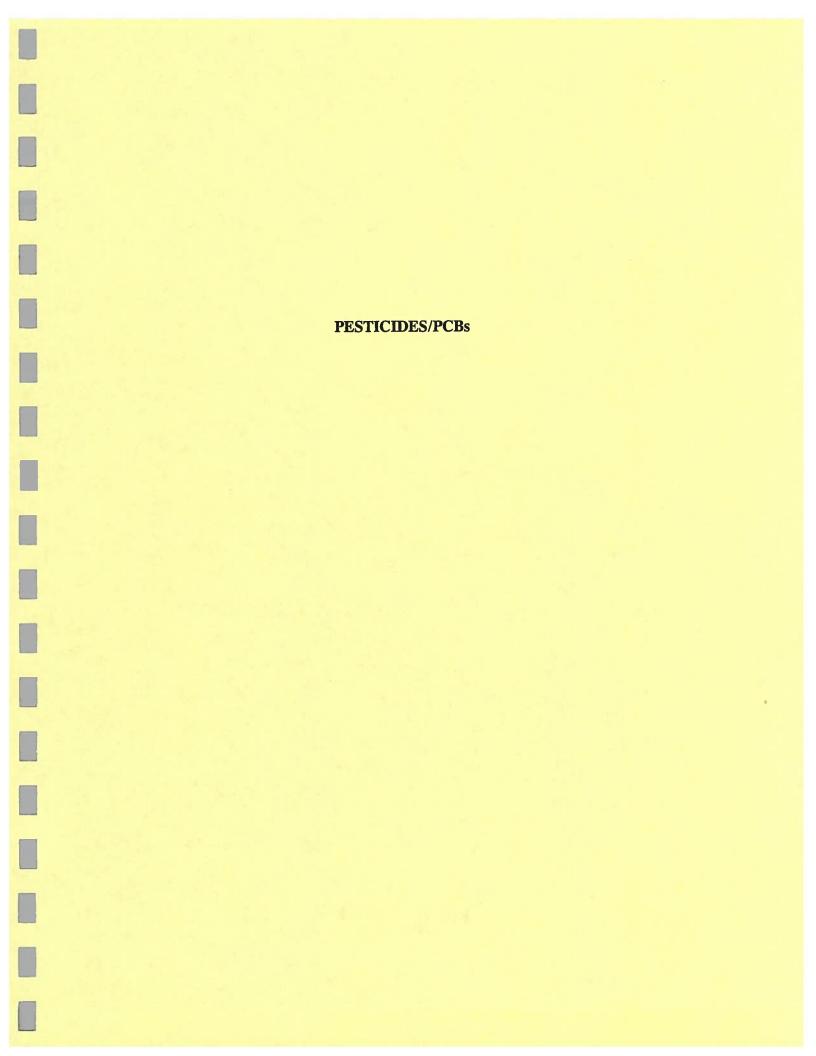
05/09/94

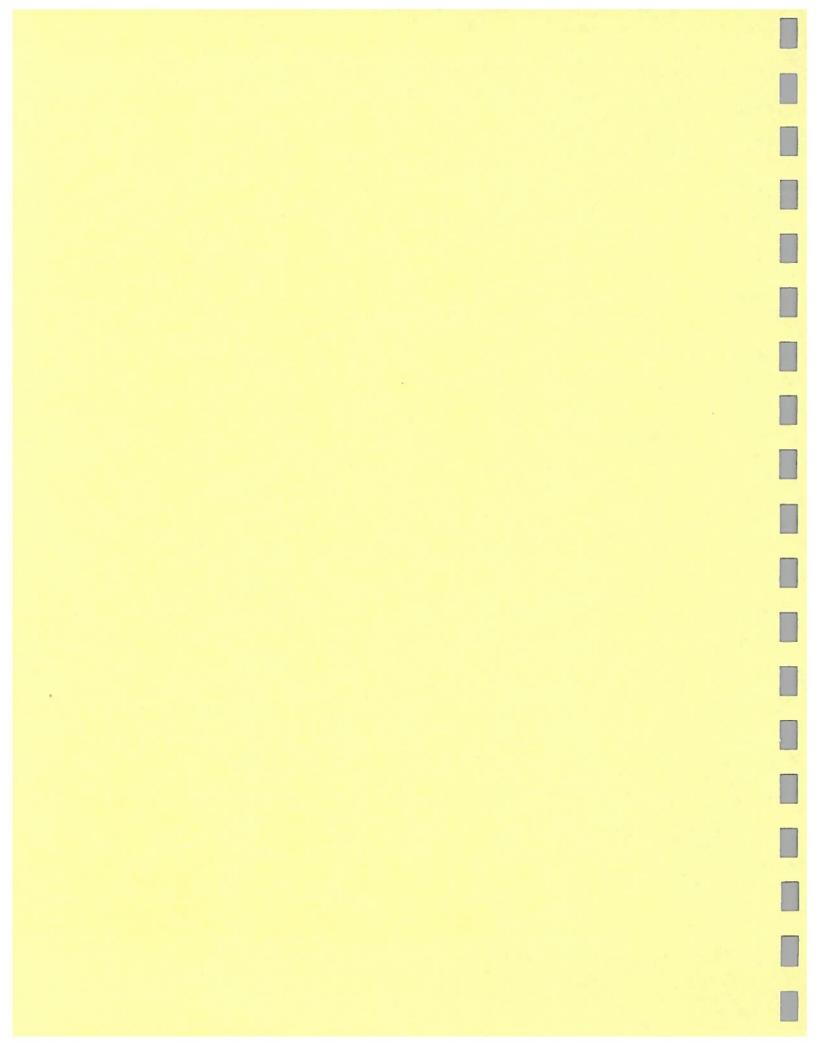
05/09/94

ms 096 SAMP	LE DISCREPANCY	REPURI	(SDK)	SDR'IN-PROGRESS ROUTING (see other side)
Initiator Date	1 Ma 412,493 Pre	rameter: <u>ال</u> atrix: المكافئة ep Batch: المقافة gency: Immediate	390,594	Category for Discrepance Log-In LIMS X Analysis/Sample Project Revision Other:
A. Reason for SDR: A1a. Requires Verification By (circlet: Log-in or Prep Group Missing Sample/Extract Wrong Sample Pulled Improper Bottle Type Container Broken Preservation Wrong Received Past Hold Insufficient Sample Label ID's Illegible A1b.	A2. Verified By (circle): Log-In or Prep Group (signature) (date)	Cancel Place On Change V MS/MSD MS/DUP Change C Wrong Te	Add Subornel	out Analysis Off Hold if enough sample: ORG/INO if enough sample: ORG/INO
Re-Log: Tech Profile Error. Sampler Error on C-O Wrong Test Code. Re Re-Leach: Metals/Inorg/N Re-Digest: AA/ICP/HG/ Re-Extract: BNA/PEST/ QC Out: SURR/MSHigh QC Out: B/BS/BSD/LCS Hold Time Exceeded: Pre Not Amenable to Analysis Other (describe) Oll Samples Decified Con Matrix Spikes and note in	O-CTranscription Error O-Log As /OA/BNA/Pest/Herb/ O/Low/<10%/Missing/2X O/LCS-DHigh/Low OP/Analysis/Report Were Spiked to Centration of Will adjust	with 1/2 surrouthe re	the gate and coveries	}
C. FINAL ACTION: a cle when Action Taken: Revision To Chain-of-C LIMS Corrections Com Other. explain Action By (name/date):	it was done, and <u>by whom</u> it was Custody Completed	s done	X Initiator: X Lab Mar X Project X Unit Le X QA (orig Log-In:	nager: Mgr: ader: ginal): eportin

SAMF	PLE DISCREPANC	Y REPORT (S	DR)	SDR IN-PROGRESS ROUTING: (see other side)
Initiator Date Client RFW Lot # Samples (b) (4)	74 M 72 443 Pr	arameter: PA atrix: LVI rep Batch: GUC rgency: Immediate A	iter Esgay	Category for Discrepancy: Log-In LIMS Analysis/Sample Project Revision Other:
Sampler Error on C- Wrong Test Code, R Re-Leach: Metals/Inorg/ Re-Digest: AA/ICP/HG/ Re-Extract: BNA/PEST/	h/Low/<10%/Missing/2X S/LCS-DHigh/Low rep/Analysis/Report	Cancel A Place On Ho Change W.O MS/MSD on MS/DUP on Change Clie Wrong Test Include in N Other. explain	dd Subdid Take . # to: Sample Sample nt name to: Code, Re-Larrative	pout Analysis ie Off Hold a wike Your if enough sample: ORG/INORG if enough sample: ORG/INORG
See ottatled		Carel Bruk Spi	BSD a Ke ao	is report the good
Action Taken:	en it was done, and by whom it was -Custody Completed	as done	X Initiato X Lab M Y Projec Unit L X QA (or Log-li	anager: - ct Mgr: .eader: riginal): n: Reporting
Action By (name/date): Forward to Pat Feldman. Q	A for distribution —	Col elilax (s	stributed Brignature/da	

44m5100





WESTEN.

GLOSSARY OF PESTICIDE/PCB DATA

DATA OUALIFIERS

- U = Indicates that the compound was analyzed for but not detected.

 The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

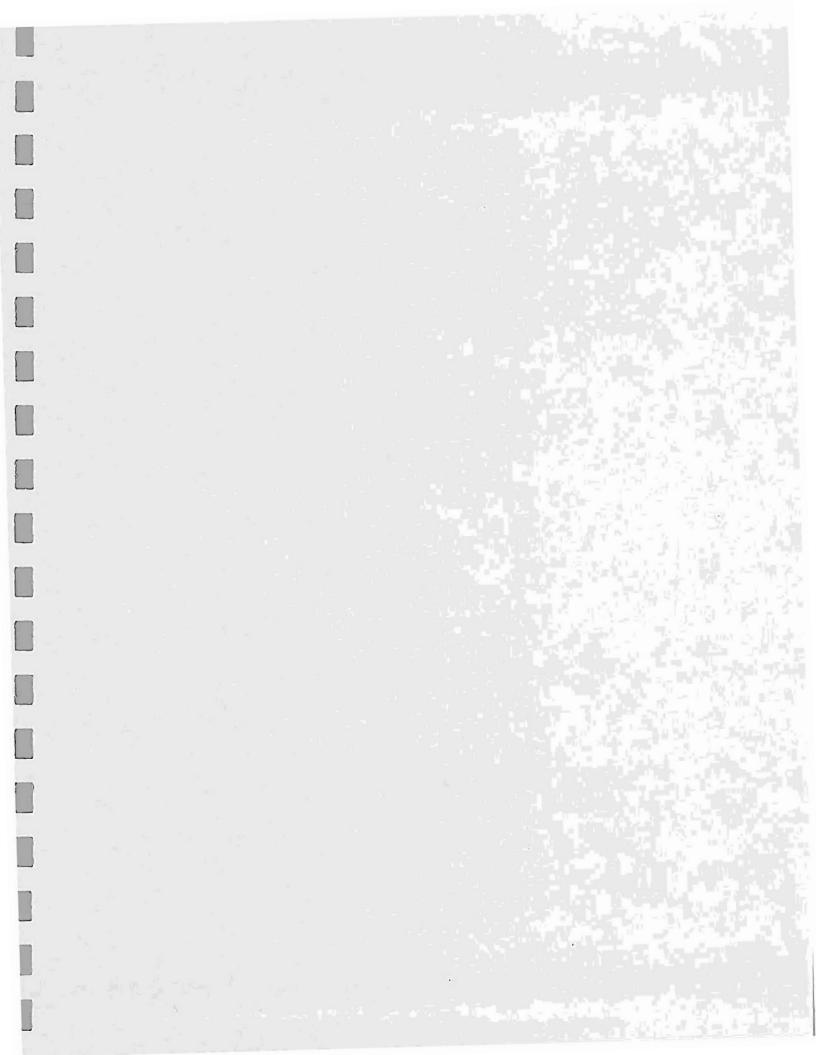
SP = Indicates spiked compound.

MAJMEN

. IND 1881 S

GLOSSARY OF PEST/PCE DATA

- This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.



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ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL W.O. #: 10535-001-001-0070-00

PESTICIDE/PCB

The set of samples consisted of eight (8) water samples collected on 05-02,03-94.

The samples were extracted on 05-06-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Pesticide and PCB target compounds on 05-12,21,23-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. Linearity and breakdown criteria were met for each of the analytical columns.
- 2. Retention time criteria were met for all compounds on both analytical columns.
- 3. Resolution of all pesticides in the Resolution Check Standard were within EPA QC limits.
- 4. The RPDs of the pesticides in the Individual Mixes analyzed for calibration verification were within 25% for both analytical columns.
- 5. The RPDs of the pesticides in the Performance Evaluation Mixes analyzed for calibration verification were within 25% for both analytical columns.
- 6. Seventeen (17) of forty-eight (48) surrogate recoveries were outside advisory EPA QC limits. Surrogate recoveries are summarized on the Form 2 included in the data package.
- 7. One (1) of seven (7) blank spike recoveries was outside EPA QC limits. The Endosulfan Sulfate recoveries were outside EPA QC limits on both columns due to the florisil cleanup procedure. However, the matrix spike recoveries were within EPA QC limits for this compound. Blank spike recoveries are summarized on the Form 3 included in the data package. A Sample Discrepancy Report (SDR) has been enclosed.
- 8. Two (2) of fourteen (14) matrix spike recoveries were outside EPA QC limits. However, matrix spike recoveries from the alternate columns were within EPA QC limits. Matrix spike recoveries are summarized on the Form 3 included in the data package.



9. The pre-florisil portion of sample extracts were analyzed and reported due to Endosulfan Sulfate being lost in the blank spike sample due to the florisil cleanup procedure. Insufficient sample volume was available to analyze the before florisil extract of the blank and blank spike samples; therefore, florisil cleaned data were reported.

(b) (4)

Laboratory Manager Lionville Analytical Laboratory 06.01.94. Date

0006

Roy F. Weston, Inc. - Lionville Laboratory Pesticide/PCBs by GC, CLP List

Client; TCB/EAL

Work Order: 10535-001-001-0070-00 Report Date: 05/27/94 14:22

Cuet ID: 2-GN-WM-2M 2-GW-WM-2D 2-GW-WM-4X 2-GN-WM-38 2-GM-NX-3M 2-GW-WM-3D Page; 1

Aroclor-1260	Aroclor-1254	Aroclor-1248	Aroclor-1242	Aroclor-1232	Aroclor-1221	Aroclor-1016	Toxaphene	gamma - Chlordane	alpha-Chlordane	Endrin aldehyde	Endrin ketone	Methoxychlor	, 4' -DDT	Endosulfan sulfate	4'-DDD	Endosulfan II	Sndrin	, 4' - DDE	Dieldrin	indosulfan I	Heptachlor epoxide	Aldrin	Heptachlor	gamma-BHC (Lindane)	Delta-BHC	Beta-BHC	Alpha-BHC			Information Ma	Sample
																												Units	D.F.;	Matrix:	RFW#:
0.22 U	0.22 U	0.22 0	0.22 U	0.22 U	0.44 U	0.22 U	1.1 0	0.011 0	0.011 0	0.022 U	0.022 U	0.11 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U		1/ E n	1.00	WATER	100
J 0.22	0.22	0,22	0.22	J 0.22	0.44	0.22	1.1	0.011	0.011	0.022	0.022	0.11	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.011	0.011	0.011	0.011	0.011		0.011	0.011	. ug/L	1.00	WATER	902
G	q	q	۵	G	¢	c	a	a	۵	C	a	c	c	~	a	G	ď	G	4	G	c	c	c	c	۵	۵	٦	į.	ŏ		_
0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.44 U	0.22 U	1.1 U	0.011 U	0.011 U	0.022 U	0.022 U	0.11 U		0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.011 U		0.011 U	0.011 U		0.011 U		0.011 U	ug/L	1.00	HATER	003
0.20 U	0.20 บ	0.20 U	0.20 U	0.20 U	0.40 U	0.20 U	1.0 U	0.010 U	0.010	0.020 U	0.020	0.10	0.020	0,020	0.020	0.020	0.020	0.020	0.020	0.010	0.010	0.010	0.010	0.010 U	0.010	0.010	0.010	ug/L	1.00	WATER	005
0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.40 U	0.20 U	1.0 U	0.010 U	0.010 U	0.020 U	0.020 U	0.10 U		0.020 U		0.020 U	0.020 U	0.020 U	0.020 U			0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	1/Bn	1.00	WATER	006
0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.40 U	0.20 บ	1.0 U	0.010 U	0.010 U	0.020 U	0.020 U	0.10 U		0.020 U			0.020 U	0.020 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	ug/L	1,00	WATER	007

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank, NR= Not requested. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of Advisory limits. . つんとういうしょうしゃ

HOLE'S JANG

Pesticide/PCBs by GC, CLP List

CLP SUMMARY

RFW Batch Number: 24051449

Client; TCB/EAL Hork Order: 19535-991-991-9070-90 Page: Page:

N

	Cust ID: 3-GW-NM-3D	- GW- NM- 3D	2-G	2-GW-WM-3D	2-Q	2-GN-NM-48	.	2-GN-WM-4D	Z	POLKER	_	PBLKBE 58	
Sample	RPE#:	0 07 KS		0 07 K BD		009		010	6	941E0889-NB1		941.20889-WB1	
Information	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.P. :	1.00	_	1.00	0	1.00	0	1.00		1.00	•	1.00	
	Units:	ug/L		1/5n		ug/L		1/bn		1/bn		1/bn	
Alpha-BHC		0.010	٦	0.010	G	010.0	حا	0.010	٦	0.010	٦	0.010 U	ı
Beta-BHC		0.010	G N	0.010	d	0.010	G		G		C	0.010 U	
Delta-BHC		0.010	6	0.010		0.010	٩		G	0.010	a	0.010 U	
gamma-BHC (Lindane)		76	No. of the last of	62	٤	0.010	G		◁	0.010	ď	72	
Heptachlor		0.010	ر د ۵	0.010	ני	0.010	d		G	0.010	C	0.010 U	
Aldrin		0.010	u	0.010	a	0.010	¢		٦	0.010	C	0.010 U	
Heptachlor apoxide		92	-	78	~	0.010	G		◘	0.010	ď	B2 ¥	
Endosulfan I		0.010	U N	0.010	<u>د</u>	0.010	G	0.010	٩	0.010	G	0.010 U	
Dieldrin		108		92		0.021	4		⊂	0.020	4	91	
4,4'-DDE		43 *	かった	26 +	TANOAR	F0.021	q	0.021	G	0.020	G	113	
Endrin		118	*	101	٠٠ الم	0.021	۵	0.021	4	0.020	G	96 1	
Endosulfan II		0.020	G	0.020	U	0.021	G	0.021	G	0.020	C	0.020 U	
4,4'-DDD		0.020	C	0.020	G	0.021	G		C	0.020	G	0.020 U	
Endosulfan sulfate		86	*	76	#	0.021	q		q	0.020	ď	12 • *	
4,4'-DDT		0.020	U	0.020	C	0,021	C		C	0.020	G	0.020 U	
Methoxychlor		0.10	ď	0.10	۵	0,10	C	0.10	G	0.10	4	0.10 U	
Endrin ketone		0.020	ď	0.020	q	0.021	G	0.021	a	0.020	G	0.020 U	
Endrin aldehyde		0.020	۵	0.020	ď	0.021	٩	0.021	C	0.020	C	0.020 U	
alpha-Chlordane		0.010	Q	0.010	q	0.010	G	0.010	٩	0.010	G	0.010 U	
gamma-Chlordane		92	-	78	#	0.010	G	0.010	a	0.010	q	76 🛊	
Toxaphene		1.0	G	1.0	4	1.0	٦	1.0	4	1.0	G	1.0 U	
Aroclor-1016		0.20	۵	0.20	ď	0.21	ď		G	0.20	ď	0.20 U	
Aroclor-1221		0.40	ď	0.40	G	0.42	G	0.42	۵	0.40	q	0.40 U	
Aroclor-1232		0.20	Q	0.20	U	0.21	đ	0.21	G	0.20	a	0.20 U	
Aroclor-1242		0.20	۵	0.20	۵	0.21	G		c	0.20	C	0.20 U	
Aroclor-1246		0.20	G	0.20	ď	0.21	G	0.21	4	0.20	a	0.20 U	
Aroclor-1254		0.20	q	0.20	ď	0.21	G	0.21	◘	0.20	G	0.20 U	
Aroclor-1260		0.20	ū	0.20	G	0.21	G	0.21	C	0.20	G	0.20 U	

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked. N= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of Advisory limits. P- Difference between columns exceeds 25%.

HELE STAP

Roy F. Weston, Inc. - Lionville Laboratory
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TCB/EAL

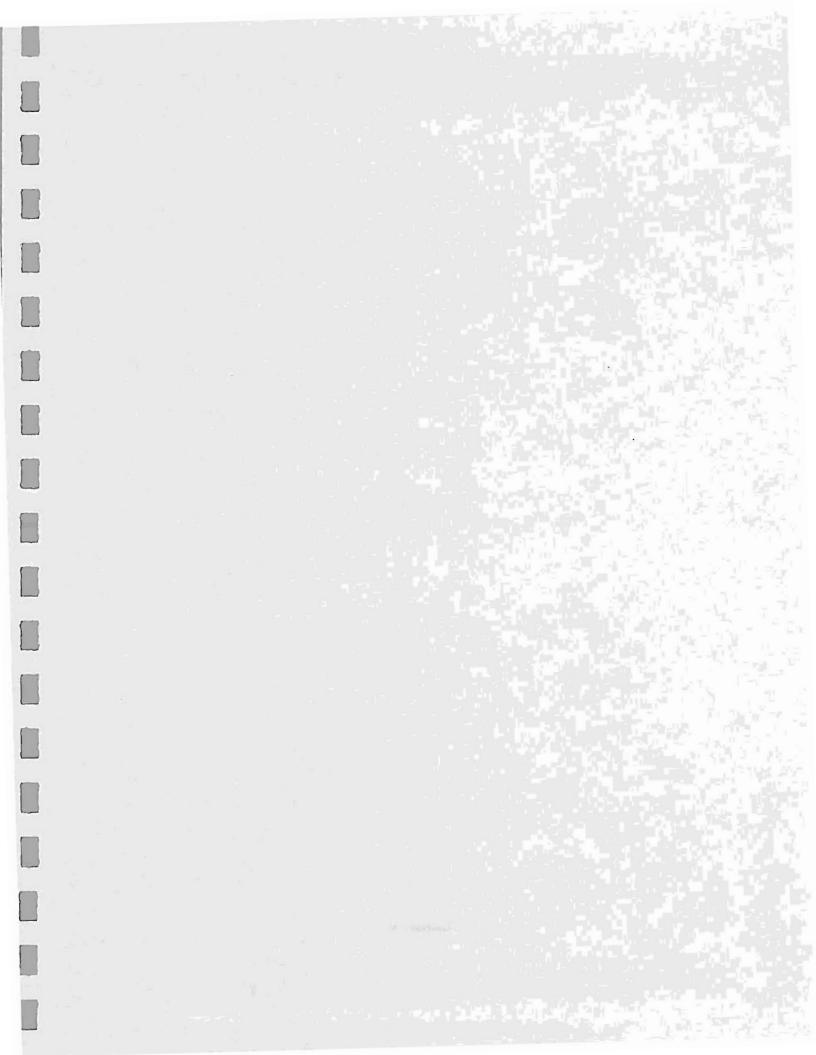
DATE RECEIVED: 05/04/94

RFW LOT # :9405L449

CLIENT ID	RPW #		MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GN-WM-2M	001		W	94LE0889	05/02/94	05/06/94	05/23/94
2-GW-WM-2M	001	X1	W		05/02/94		05/23/94
2-GW-WM-2D	002		W	94LE0889	05/02/94	05/06/94	05/23/94
2-GW-WM-2D	002	ХJ	W		05/02/94		05/23/94
2-GW-WM-4M	003		W	94LE0889	05/03/94	05/06/94	05/23/94
2-GW-WM-4M	003	Хl	W		05/03/94		05/23/94
2-GW-WM-3S	005		W	94LE0889	05/02/94	05/06/94	05/21/94
2-GW-WM-3S	005	X1	W		05/02/94		05/21/94
2-GW-WM-3M	006		W	94LE0889	05/02/94	05/06/94	05/23/94
2-GW-WM-3M	006	X1	W		05/02/94		05/23/94
2-GW-WM-3D	007		W	94LE0889	05/02/94	05/06/94	05/21/94
2-GW-WM-3D	007	Хl	W		05/02/94		05/21/94
2-GW-WM-3D	007 MS		W	94LE0889	05/02/94	05/06/94	05/21/94
2-GW-WM-3D	007 MS	X1	W		05/02/94		05/21/94
2-GW-WM-3D	007 MS	D	W	94LE0889	05/02/94	05/06/94	05/21/94
2-GW-WM-3D	007 MS	D X1	W		05/02/94		05/21/94
2-GW-WM-4S	009		W	94LE0889	05/03/94	05/06/94	05/23/94
2-GW-WM-45	009	X1	W		05/03/94		05/23/94
2-GW-WM-4D	010		W	94LE0889	05/03/94	05/06/94	05/23/94
2-GW-WM-4D	010	X1	W		05/03/94		05/23/94
B QC:							
PBLKBE	MB1		W	94180889	N/A	05/06/94	05/12/94
PBLXBE	MB1		W		N/A	(1-	05/12/94
PBLKEE	MB1 BS		W	94LE0889	N/A	05/06/94	05/12/94
PBLKBE	MB1 BS		W		N/A		05/12/94

915c 27.94

94CC178 SAM	PLE DISCREPANCY	REPOR	RT (SDR)	SDR IN-PROGRESS ROUTING (see other side)
Initiator Date Client RFW Lot # SUCLUM Samples	Ma ,473,463 Pre Ur	itrix: ep Batch:	120 1420 946089 94608946 ateOther	Category for Discrepance Log-in LIMS X Analysis/Sample Project Revision Other:
Sampler Error on C-C Wrong Test Code, Re Re-Leach: Metals/Inorg/ Re-Digest: AA/ICP/HG/ Re-Extract: BNA/PEST/ OC Out: SURR/MSHigh OC Out: B/BS/BSD/LCS Hold Time Exceeded: Pre Not Amenable to Analysis Other (describe)	/OA/BNA/Pest/Herb/	Cance Place Chang MS/M MS/D Chang Wrong		out Analysis e Off Hold _if enough sample: ORG/INO _if enough sample: ORG/INO
Action Taken: Revision To Chain-of-C LIMS Corrections Com Other, explain NOTED / // NA	it was done, and <u>by whom</u> it was d ustody Completed pleted		D. Distribution of X Initiator: X Lab Mana Y Project I Y Unit Lea X QA (origination of Log-In: Data Reight Billing:	Mgr. deri nal):
Action By Iname / date) Forward to Pat Feldman. QA f	or distribution		Distributed By: (signature/date)	



	8



ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL W.O. #: 10535-001-0070-00

PESTICIDE/PCB

The set of samples consisted of six (6) water samples collected on 05-03,04-94.

The samples were extracted on 05-06-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Pesticide and PCB target compounds on 05-12,21,23-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. Linearity and breakdown criteria were met for each of the analytical columns.
- 2. Retention time criteria were met for all compounds on both analytical columns.
- Resolution of all pesticides in the Resolution Check Standard were within EPA QC limits.
- 4. The RPDs of the pesticides in the Individual Mixes analyzed for calibration verification were within 25% for both analytical columns.
- 5. The RPDs of the pesticides in the Performance Evaluation Mixes analyzed for calibration verification were within 25% for both analytical columns.
- 6. Seventeen (17) of thirty-two (32) surrogate recoveries were outside the advisory EPA QC limits. Surrogate recoveries are summarized on the Form 2 included in the data package.
- 7. One (1) of seven (7) blank spike recoveries was outside EPA QC limits. Blank spike recoveries are summarized on the Form 3 included in the package.

The pre-florisil portion of sample extracts were analyzed and reported due to Endosulfan Sulfate being lost in the blank spike sample due to the florisil cleanup procedure. Insufficient sample volume was available to analyze the before florisil extract of sample 2-FB-WM-5D and the blank and blank spike samples; therefore, florisil cleaned data were reported.



8. Recoveries of pesticides for the Florisil Cartridge Check were within EPA QC limits.



Laboratory Manager Lionville Analytical Laboratory

172pp.cs

06.03.94. Date

Cust ID: 2-GW-WM-58 2-GW-WM-5M 2-GM-MM-5D 3-GW-WK-6H 2-GW-101-6D 2-78-WW-SD

001 NTER 1 1.00 ug/L	002 WATER . 1.00 ug/L	00: WATER 1.: ug/	003 NTER 1.00 ug/L	004 WATER 1.00 ug/L	005 WATER 1.00 ug/L	00 WATER 1. ug/	006 (TER 1.00
	1.00	WATE 1 1 ug	7t	WATER 1.00 ug/L	WATER 1.00 ug/L	чат	ER 1.00
	1.00 ug/L	ug 1	.00	1.00 ug/L	1,00 1/L	ç	1.00 1.00
	1/Bn	Бn	72	1/Bn	ug/L	ç	4/L
		0.01	٠,		010	0	0 110
		0.01					011 U
		0.01					
		0.01					מ ננו
		0.01	•)11 U
	.012	0.01	•	-			מ ננו
	-	0.01)11 U
q		0.01)11 U
q		0.02					122 U
ם		0.02					122 U
۵		0.02					122 U
۵		0.02)22 U
G		0.02					
a -		0.02					122 U
q -		0.02					122 U
		0.1					0.11 Ú
		0.02				٥)22 U
		0.02)22 U
		0.01)11 U
		0.01				0	. 011 U
q	1.2 U	1.					1.1 0
q	0.24 U	0.2			•	· 0.	. 22 U
G	0.48 U	0.4					0.44 U
q	0.24 U	0.2					0.22 U
ď		0.2			0.21	0.	0.22 U
ď		0.2			0.21	0.	0.22 U
ū		0.2		0.22 ป	0.21	0.	. 22 U
a	0.24 U	0.2		0.22 U	0.21	0.	, 22 U
0.011 U 0.012 U 0.012 U 0.011 U 0.012 U 0.012 U 0.024 U 0.022 U 0.022 U 0.024 U 0.24 U 0.22 U 0.24		0.0000000000000000000000000000000000000	0.012 U U U U U U U U U U U U U U U U U U U	0.0112 0.0112 0.0112 0.0224 0.0224 0.0224 0.0224 0.0224 0.0224 0.0224 0.0224	0.012 U 0.011 U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.012 U 0.011 U 0.011 U 0.010 0.012 U 0.011 U 0.011 U 0.010 0.012 U 0.011 U 0.011 U 0.010 0.012 U 0.011 U 0.011 U 0.010 0.012 U 0.011 U 0.011 U 0.010 0.012 U 0.011 U 0.011 U 0.010 0.012 U 0.011 U 0.011 U 0.010 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.022 U 0.021 0.024 U 0.022 U 0.021 U 0.010 0.24 U 0.022 U 0.022 U 0.021 0.24 U 0.22 U 0.22 U 0.21 0.25 U 0.25 U 0.21 0.26 U 0.27 U 0.21 0.27 U 0.27 U 0.21	0.012 U 0.011 U 0.011 U 0.010 U 0.012 U 0.011 U 0.011 U 0.010 U 0.012 U 0.011 U 0.011 U 0.010 U 0.012 U 0.011 U 0.011 U 0.010 U 0.011 U 0.011 U 0.010 U 0.011 U 0.011 U 0.010 U 0.011 U 0.011 U 0.010 U 0.011 U 0.011 U 0.010 U 0.011 U 0.011 U 0.010 U 0.011 U 0.011 U 0.011 U 0.011 U 0.011 U 0.011 U 0.011 U 0.011 U 0.011 U 0.011 U 0.011 U 0.011 U 0.021 U 0.022 U 0.021 U 0.021 U 0.022 U 0.021 U 0.021 U 0.022 U 0.021 U 0.021 U 0.021 U 0.022 U 0.021 U 0.021 U 0.021 U 0.022 U 0.021 U 0.021 U 0.021 U 0.022 U 0.021 U 0.22

%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of Advisory limits.
P= Difference between columns exceeds 25%.

Client; TCB/EAL Nork Order: 10535-001-001-0070-00 Page Page:

1. 10 - 10

Cust ID: PBLKBE PHLKBS BS

RFW Batch Number: 94051472

CLP SUMMARY

ď	0.20	G	0.20		Arodlor-1260
q	0.20	q	0.20		Aroclor-1254
4	0.20	G	0.20		Aroclor-1248
q	0.20	c	0.20		Aroclor-1242
۵	0.20	ď	0.20		Aroclor-1232
C	0.40	G	0.40		Aroclor-1221
q	0.20	4	0.20		Aroclor-1016
C	1.0	¢	1.0		Toxaphene
*	78	q	0.010		gamma-Chlordane_
Ø	0.010	۵	0.010		alpha-Chlordane_
a	0.020	q	0.020		Endrin aldehyde_
q	0.020	c	0.020		Endrin ketone
Ø	0.10	G	0.10		Methoxychlor
۵	0.020	۵	0.020		A, A' -DDT
4	12 •	q	0.020	Te	Endosulfan sulfate
ď	0.020	4	0.020		4,4'-DDD
u	0.020	ď	0.020		Endosulfan II
*	96	d	0.020		Endrin
4	113	¢	0.020		4,4'-DDE
*	16	4	0.020		Dieldrin
a	0.010	q	0.010		Endosulfan I
*	82	G	0.010	de	Heptachlor epoxide
G	0.010	d	0.010		Aldrin
G	0.010	q	_ 0.010		Heptachlor
*	72	ď	0.010	ne)	gamma-BHC (Lindane)
□	0.010	4	0.010		Delta-BHC
q	0.010	q	0.010		Beta-BHC
اء	0.010	۵	0.010		Alpha-BHC
۲	1/gu	r	ug/L	Units:	
00	1.00	00	1.00	D. ١٩. :	
	WATER		WATER	Matrix:	Information
	1404-688047\$6		94LE0889-MB1	况可记者:	Sample

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
T= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of Advisory limits. P- Difference between columns exceeds 25%.

0 0 15

Roy F. Weston, Inc. - Lionville Laboratory PBST/PCB ANALYTICAL DATA PACKAGE FOR TCB/EAL

DATE RECEIVED: (35/04/94				1	RPW LOT # :9	405L472
CLIENT ID	RPW #		MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-5S	001		- 	94LE0889	05/04/94	05/06/94	05/23/94
2-GW-WM-55	001	X1	w	J4III 0003	05/04/94	03/00/34	05/23/94
2-GW-WM-5M	002		W	94LE0889	05/04/94	05/06/94	05/23/94
2-GW-WM-SM	002	X1	W		05/04/94	,,	05/23/94
2-GW-WM-5D	003		W	94LE0889	05/04/94	05/06/94	05/23/94
2-GW-WM-5D	003	X1	W		05/04/94		05/23/94
2-GW-WM-6M	004		W	94LE0889	05/03/94	05/06/94	05/23/94
2-GW-WM-6M	004	X1	W		05/03/94		05/23/94
2-GW-WM-6D	005		W	94LE0889	05/03/94	05/06/94	05/23/94
2-GW-WM-6D	005	X1	W		05/03/94		05/23/94
2-FB-WM-5D	006		W	94LE0889	05/04/94	05/06/94	05/21/94
2-FB-WM-5D	006	X1	W		05/04/94		05/21/94
AB QC:							
PBLKBE	MB1		W	94LE0889	N/A	05/06/94	05/12/94
PBLKBE	MB1		W		N/A		05/12/94
PELKBE	MB1 BS	,	W	94LE0889	N/A	05/06/94	05/12/94

W

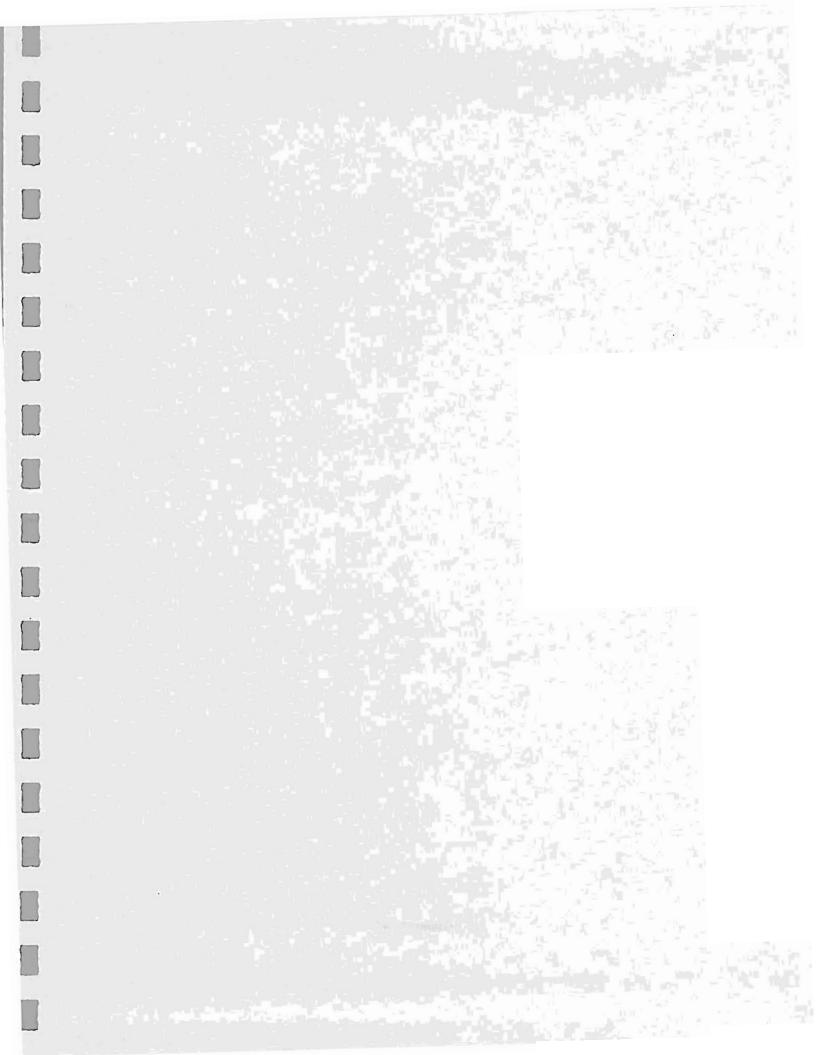
N/A

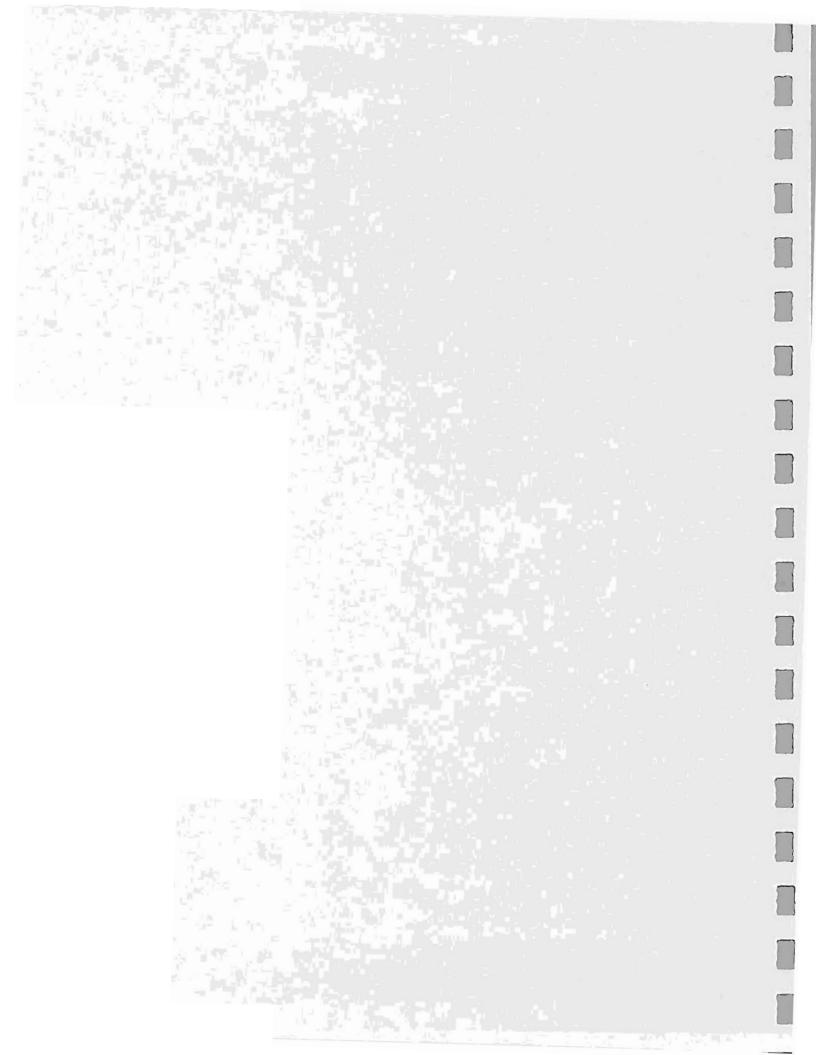
MB1 BS

PBLKBE

05/12/94

94CC178SAMI	PLE DISCREPANC	Y REPOR	(SDH)	SDR IN-PROGRESS ROUTING: (see other side)
Initiator Date Client TCB/CA RFW Lot # 9405 449 Samples	м ,472,493 Pr	atrix: rep Batch:	ALKEORAGE	Category for Discrepancy: Log-In LIMS X Analysis/Sample Project Revision Other:
Sampler Error on C-O Wrong Test Code, Re Re-Leach: Metals/Inorg/N Re-Digest: AA/ICP/HG/ Re-Extract: BNA/PEST/ QC Out: SURR/MSHigh QC Out: B/BS/BSD/LCS, Hold Time Exceeded: Pre Not Amenable to Analysis X Other (describe) ENDO SULFATE GUT Pre-Floris I (Liports d.	COA/BNA/Pest/Herb/	Disp Cance Place Chang MS/N MS/D Chang Wrong Includ		out Analysis e Off Hold .if enough sample: ORG/INOR(,if enough sample: ORG/INOR(
Action Taken: Revision To Chain-of-Cu UMS Corrections Comp Other, explain	t was done, and by whom it was ustody Completed pleted specifically specified by the specif		X Initiator: X Lab Mans X Project M Unit Leac X QA (origin Log-in: Data Rep Billing: Distributed By: (signature/date)	Agr. def.d nat):







ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL RFW #: 9405L493 W.O. #: 10535-001-001-0070-00 Date Received: 05-06-94

PESTICIDE/PCB

The set of samples consisted of seven (7) water samples collected on 05-04,05-94.

The samples were extracted on 05-09-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Pesticide and PCB target compounds on 05-23,24-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. Linearity and breakdown criteria were met for each of the analytical columns.
- 2. Retention time criteria were slightly exceeded for target compounds TCX/DCB on the DB608 column in sample extract 2-GW-WM-6S analyzed on 05-23-94 at 2020. Slightly larger retention time windows were used to evaluate the data.
- 3. Resolution of all pesticides in the Resolution Check Standard were within EPA QC limits.
- 4. The RPDs of the pesticides in the Individual Mixes analyzed for calibration verification were within 25% for both analytical columns.
- 5. The RPDs of the pesticides in the Performance Evaluation Mixes analyzed for calibration verification were within 25% for both analytical columns.
- 6. Thirteen (13) of thirty-three (33) obtainable surrogate recoveries were outside the advisory EPA QC limits. Surrogate recoveries are summarized on the Form 2 included in the data package. All surrogate recoveries were outside EPA QC limits for sample extract 2-GW-WM-1S in the pre-florisil analysis. The florisil cleaned portion produced similar results; therefore, only the pre-florisil analysis was included in the package. A Sample Discrepancy Report (SDR) has been enclosed.
- 7. All blank spike recoveries were within EPA QC limits. Blank spike recoveries are summarized on the Form 3 included in the package.



- 8. Endosulfan Sulfate was absorbed during florisil cleanup; therefore, the pre-florisil extracts were reported for all samples and associated QC samples. A Sample Discrepancy Report (SDR) has been enclosed.
- 9. Recoveries of pesticides for the Florisil Cartridge Check were within EPA QC limits.

(b) (4)

Laboratory Manager Lionville Analytical Laboratory

sma/jkd/pcb/05-493pp.cs

06.02,94.

0005A

	Cust ID: 2	2-GW-MM-68	2-GW-WM-28	2-GM-MK-18	3-GM-MM-1M	3-DP-WM-1K	2-GN-MK-1D
Sample	RPW#:	001	002	003	005	006	097
Information	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1,00	1.00	1.00	1.00	1.00	1.00
	Unita:	ug/L	1/6n	ug/L	1/bn	1/Bn	ug/L
Alpha-BHC		0.011 U	0.011 U	0.011	0.011	0.010 U	0.010 U
Beta-BHC			0.011 U			010	0.010 U
Delta-BHC		•					_
gamma-BHC (Lindane)					0,011		
Heptachlor					0.011		
Aldrin							0.010 U
Heptachlor apoxide		0.011 U				0.010 U	
Endosulfan I		0.011 U	0.011 U				
Dieldrin		0.022 U	0.022 U	0.022 (J 0.022 U		0.021 U
, 4' -DDB		0.022 U	0.022 U	0.022 (J 0.022 U		
Endrin_		0.022 0	0.022 U	0.022 (J 0.022 ປ		0.021 U
Endosulfan II		0.022 U	0.022 U	0.022 (J 0.022 U		
4,4'-DDD		0.022 U	0.022 U	0.022 (0.021 U
Endosulfan sulfate		0.022 U	0.022 U	0.022 (J 0.022 U	0.021 U	0.021 บ
4,4'-DDT		0.022 U	0.022 U	0.022 1			0.021 U
Methoxychlor		0.11 U	0.11 U	0.11 (0.10 U	0.10 U
Endrin ketone		0.022 U	0.022 U	0.022 (J 0.022 U	0.021 U	0.021 U
Endrin aldehyde		0.022 U	0.022 U			0.021 U	0.021 U
alpha-Chlordane		0.011 U	0.011 U	0.011 (0.011 U	0.010 U	0.010 U
gamma-Chlordane		0.011 U	0.011 U	0.011	J 0.011 U	0.010 U	0.010 U
Toxaphene		1.1 U	1.1 U	1.1	J 1.1 U	1.0 U	1.0 0
Aroclor-1016		0.22 U		0.22 (J 0.22 U	0.21 บ	0.21 U
Aroclor-1221		0.44 U		0.44 [J 0.44 U	0.42 U	0.42 U
Aroclor-1232		0.22 U	0.22 0	0.22 (ປ 0.22 ປ	0.21 U	0.21 U
Aroclor-1242		0.22 U	0.22 U	0.22 (J 0.22 U	0.21 U	0,21 U
Aroclor-1248		0,22 U	0.22 U		U 0.22 U	0,21 ע	0,21 U
Aroclor-1254		0.22 U	0.22 U			0.21 U	0.21 U
Brocler-1060		0 22 11	2				,

U= Analyzed, not detected. J* Present below detection limit. B* Present in blank. NR= Not requested. NS= Not spiked. * Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. * Outside of Advisory limits. P= Difference between columns exceeds 25%. JUNC 5-30-94

CLP SUMMARY

RFW Batch Number: 94051493

	Cust ID: PBLICER	PBLKBH	PBLKBH B6	PBLKBH BSD	
Sample	RFW#:	94LE0896-MB1	941E0896-MB1	94LE0896-MB1	
Information	Matrix:	WATER	WATER	WATER	
	D. F.	1.00	1.00	1,00	
	Unite:	1/Bn	1/En	ug/L	
Alpha-BHC		0.010 U	0.010 0	0.010 11	
Beta-BHC					
Delta-BHC			0.010 U		
gamma-BHC (Lindane)					
Heptachlor			0	0	
Aldrin					
Heptachlor epoxide		0.010 U			
Endosulfan I			0.010 U	0.010 U	
Dieldrin		0.020 U	96	96	
4,4'-DDE		0.020 U	102 🕏	106	
Endrin		0.020 U	96	99 4	
Endosulfan II		. 0.020 U	0.020 U	0.020 U	
4,4'-DDD		0.020 U	0.020 U	0.020 U	
Endosulfan sulfate		0.020 U	77 *		
4,4'-DOT		0.020 U	0.020 U	0.020 U	
Methoxychlor		0.10 U	0.10 U		
Endrin ketone		0.020 U	0.020 U		
Endrin aldehyde		0.020 U	0.020 U	0.020 U	
alpha-Chlordane		0.010 U	0.010 U	0.010 U	
gamma-Chlordane		. 0.010 U	84 4		
Toxaphene		1.0 U	1.0 U	1.0 U	
Aroclor-1016		. 0.20 U	0.20 U	0.20 U	
Aroclor-1221		0.40 0	0.40 U	0.40 U	
Aroclor-1232		0,20 U	0.20 U	0.20 U	
Aroclor-1242		0.20 U	0.20 U	0.20 U	
Aroctor-1248		0.20 U	0.20 U	0.20 U	
Aroctor-1254		0.20 U	0.20 U	0.20 U	
WEGG105-1790		0.20 0	0.20 U	0.20 บ	

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR* Not requested. NS= Not spiked. Y= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of Advisory limits. P= Difference between columns exceeds 25%.

200cs.8094

Roy F. Weston, Inc. - Lionville Laboratory PEST/PCB ANALYTICAL DATA PACKAGE FOR TCB/EAL

DATE RECEIVED: 05/06/94

RFW LOT # :9405L493

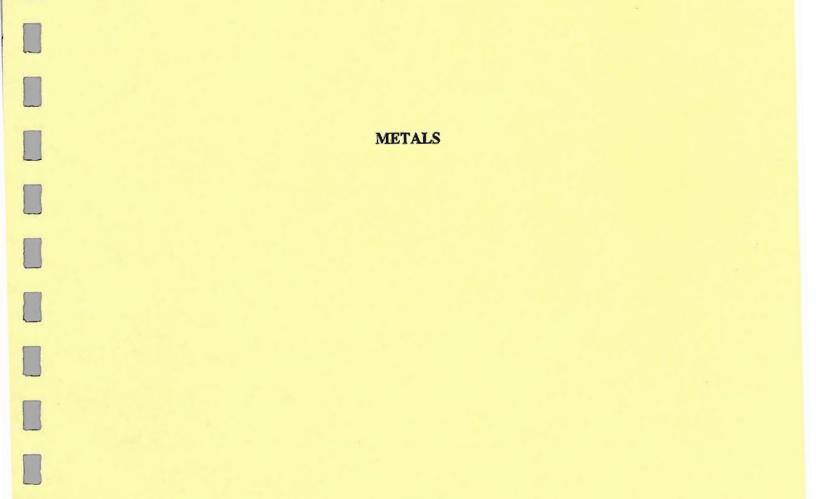
CLIENT ID	RFW #	MTX	PREP #	COLLECTION	extr/prep	ANALYSIS
2-GW-WM-6S	001	W	94LE0896	05/04/94	05/09/94	05/23/94
2-GW-WM-2S 2-GW-WM-1S	002 003	W	94LE0896 94LE0896	05/05/ 94 05/05/94	05/09/94 05/09/94	05/23/94 05/23/94
2-GW-WM-1M	005	W	94LE0896	05/05/94	05/09/94	05/23/94
2-DP-WM-1M 2-GW-WM-1D	006 007	W W	94LE0896 94LE0896	05/05/94 05/05/94	05/09/94 05/09/94	05/24/94 05/24/94
LAB QC:						,
PBLKBE	MB1	W	94LE0896	N/A	05/09/94	05/23/94
PBLXBH	MB1 BS	W	94LE0896	N/A	05/09/94	05/23/94
PBLKDH	MB1 BSD	W	94LB0896	N/A	05/09/94	05/23/94

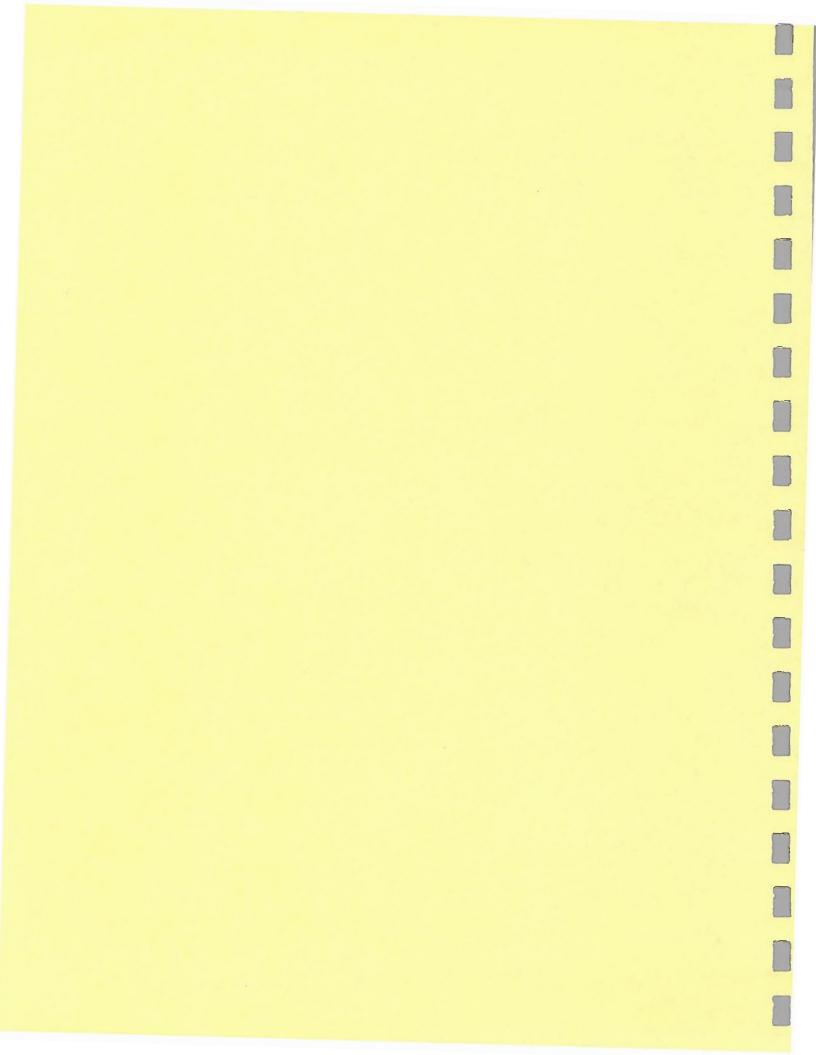
SHC 5-30.94



CC 177 — SAMI	PLE DISCREPAN	ICY REPOR	T (SDR)	SDR IN-PROGRESS ROUTING. (see other side)
Initiator Date Client RFW Lot # Samples Distribution Date Distribution Distributio	13-003	Parameter:		Category for Discrepancy: Log-in LIMS Analysis/Sample Project Revision Other:
Wrong Test Code, Re-Re-Leach: Metals/Inorg/ Re-Digest: AA/ICP/HG/_ Re-Extract: BNA/PEST/_ QC Out: SURR/MSHig QC Out: B/BS/BSD/LCS Hold Time Exceeded: Pr Not Amenable to Analysis X Other (describe) (CU) SUR POOLE: \$60	D-CTranscription Error D-CTranscription Error D-Log As VOA/BNA/Pest/Herb/_ h/Low/<10%/Missing/2 B/LCS-DHigh/Low ep/Analysis/Report D-LOG CO- COLLING CALLOCATION FINE EXTIGITY THE FINE SCENTION GUIG Similar	Dispo	On Hold Take www.co. # to: To:	out Analysis e Off Hold _if enough sample: ORG/INORG _if enough sample: ORG/INORG
Action Taken: Revision To Chain-of- UMS Corrections Corr Other, explain	it was done, and by whom in Custody Completed inpleted in the completed n the complete in the complete	t was done	X Initiator: X Lab Mar X Project Unit Les X QA (orig Log-In: Data Ri Billing: Distributed By: (signature/date	nager Mgr: ader: inal): eport

94K2C178 SAM	PLE DISCREPANCY	REPORT (SDR)	SDR IN-PROGRESS ROUTING: (see other side)
Initiator Date Client RFW Lot # 9405 449 Samples	Ma 1,473,493 Pre Urg	rameter: 0608H trix:	
A. Reason for SDR: Ata. Pequires Verification By (circle): Log-in or Prep Group Missing Sample /Extract Wrong Sample Pulled Improper Bottle Type Container Broken Preservation Wrong Received Past Hold Insufficient Sample Label ID's Illegible	A2. Verified By (circle): Log-in or Prep Group (signature) (date)		iubout Analysis Take Off Hold if enough sample: ORG/INORif enough sample: ORG/INOR
	OA/BNA/Pest/Herb/		
C. FINAL ACTION: a clear when he Action Taken: Revision To Chain-of-Culum's Corrections Comporter, explain	was done, and by whom it was do stody Completed leted		knage st Mgr sader: iginal) : Report
Action By mame/date): Forward to Pat Feldman, QA for Hew 21-21-006/E-10/90 (SDR Revision 5		Distributed By: (signature/dat	



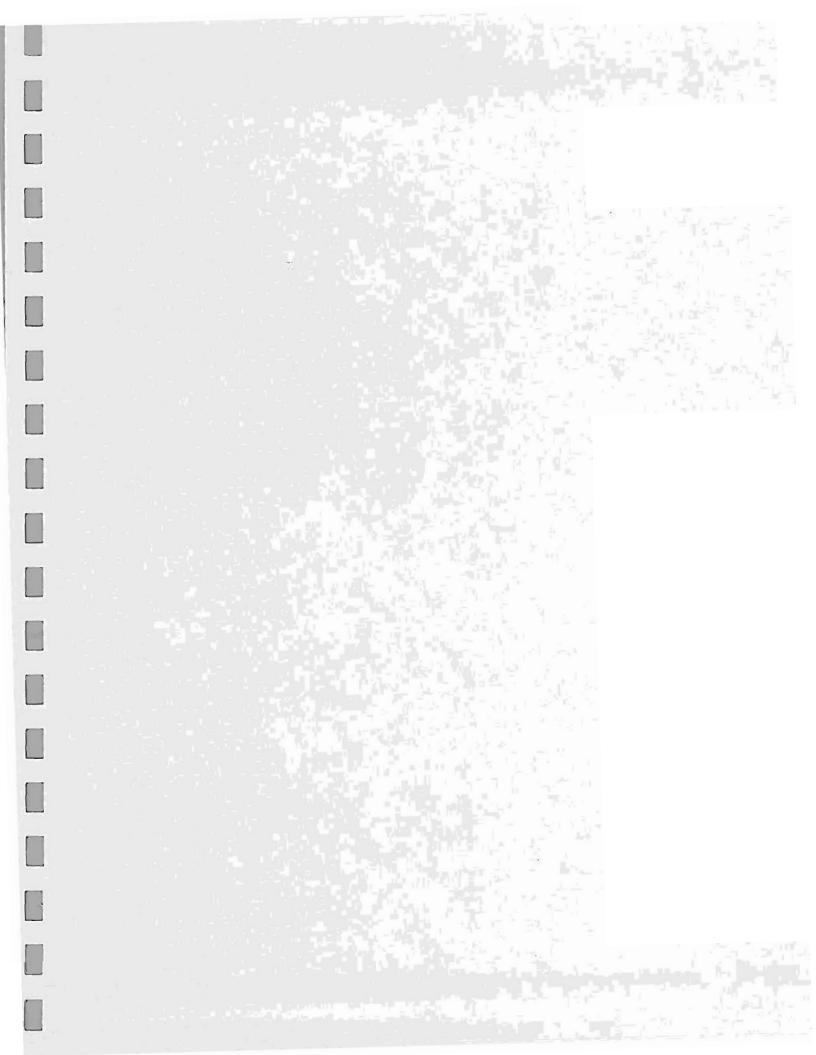


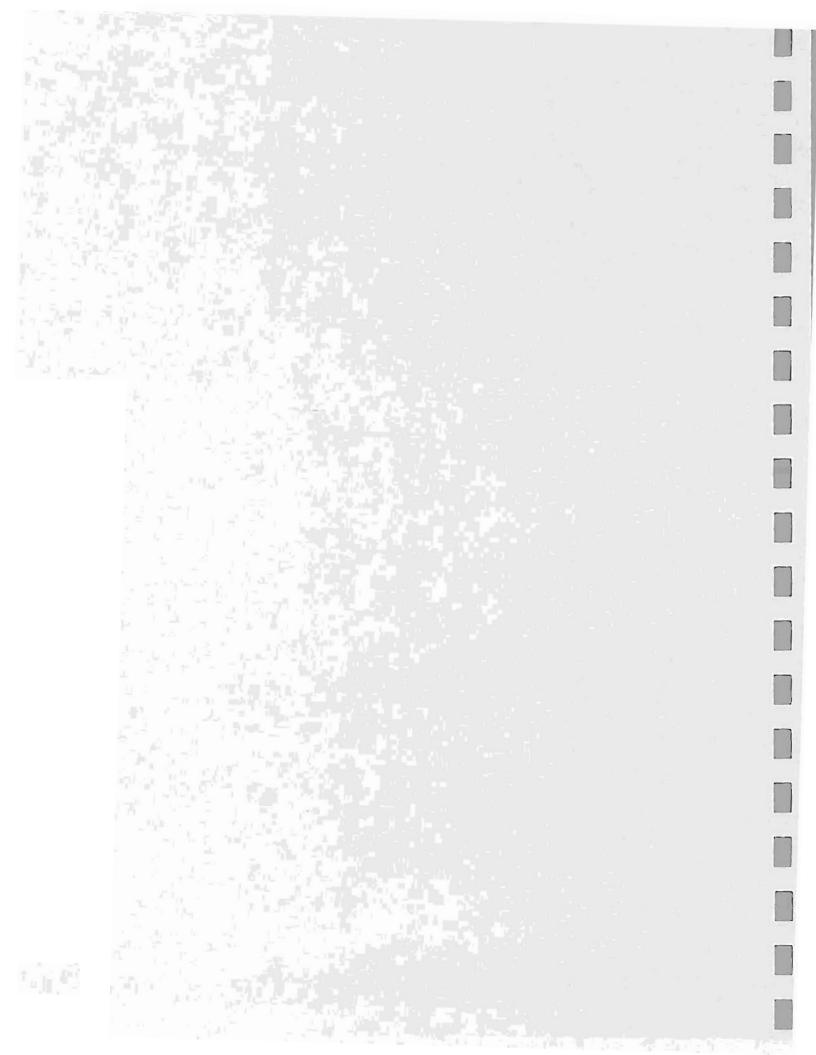
Lockheed Analytical Services DATA QUALIFIERS FOR INORGANIC ANALYSES

[Revised 08/28/92]

The service of the se	
	For Use on the Analytical Data Reporting Forms
В	For CLP Analyses Only — Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
С	For Routine, Non-CLP Analyses Only — Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL).
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
H	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
М	For CLP Analyses Only - Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	For CLP Reporting Only — Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
w	For AAS Only — Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
	For Use on the QC Data Reporting Forms
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC summary form.







Lockheed Analytical Services 975 Kelly Johnson Drive Las Vegas, Nevada 89119-3705 Phone: (702) 361-0220 Fax: (702) 361-6434

June 7, 1994

(b) (4)

Lionville Analytical Laboratory 208 Welsh Pool Road Lionville, PA 19341-1313

RE: Log-in No.:

L1867

Quotation No.:

Q333550

Document File No.:

0507499

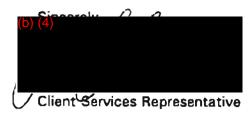
The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on May 7, 1994. The temperature of the cooler/coolers upon receipt was 11 °C. All containers were properly labeled and agree with the chain-of-custody. Sample containers were received intact. Sample containers were properly preserved for the analysis requested. Sample containers had sufficient sample volume for the analysis requested. All samples were received within the analytical holding time. All discrepancies identified upon receipt of the samples have been forwarded to the client.

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call James L. Jordan, at (702) 361-3955, ext. 289.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.



JLJ/sm

cc: Client Services

Document Control

Log-in No.: L1867

Quotation No.: Q0333550 Document File No.: 0507499

Page 1

CASE NARRATIVE INORGANIC ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), duplicate sample(s).

Preparation and Analysis Requirement-

The samples were digested and analyzed as batch 505WES for ICPAES metals and 510WES for ICP-MS metals and mercury. For these batches, sample 2-GW-WM-3D (L1867-6) was used for matrix spike and duplicate analysis. All flags due to the performance of the above mentioned QCs are also associated with every sample digested with this batch.

Holding Times-

All samples were analyzed within the method-specific holding times.

Method Blanks-

The level of analytes in the method blanks were within acceptance limits.

Internal Quality Control-

All Internal Quality Control were within acceptance limits with the following exceptions:

For aluminum and iron the duplicate precision was out side the acceptance limits at 53% and 27% respectively. The poor duplicate precision is likely due to inhomogeneity of the sample with respect to these analytes.

The matrix spike recovered outside the control limits for aluminum. The acceptable recovery of the laboratory control standard (LCSW) (103.4%) and the post spike (83.5%) indicate that the analytical system was operating in control and that the out-of-control spike recovery may be attributed to the presence of matrix interferences.

Sample Results- Report information.

Due to software field size limitation, the hyphens were omitted in the client sample IDs in the report.

Lockheed Analytical Services

Log-in No.: L1867

Quotation No.: Q0333550 Document File No.: 0507499

Page 2

The following method codes are used for reporting:

ICPAES - "P"

ICP-MS - "MS"

CVAA - "AV"

The RDL reported on form X of this package are the reporting detection limits requested by the client or the instrument detection limit whichever is higher.

(b) (4)

Prepared By

June 7, 1994

Date



(b) (4)

Lockheed Analytical Services

6 May 1994

RFW #	# of Samples	Parameter
9405 L 449	8	TAL Metals
9405L493	3	TAL Metals
9405L <i>47</i> 2	6	TAL Metals

NOTE:

Please provide an MS/Rep. on sample 9405L449-007 and 9405L449-010

0507499

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

	Lab Name: L.E.S.A.T	Contract:	WESTON	_	
	Lab Code: LOCK Case No.: 510WE	S SAS No.:		SDG No.:L	1867 W
(in)	SOW No.: 3/90_				
	CLIENT ID NO. 2DPWM1M 2PBWM5D 2GWWM1D	Lab Sam L1867 L1867 L1867	-20 -15 -21		
	2GWWM1M 2GWWM1S	L1867 L1867	-18		
	_2GWWM2D _2GWWM2M _2GWWM2S	L1867 L1867 L1867	-1 		
	ZGWWM3D ZGWWM3DD ZGWWM3DS ZGWWM3M	L1867 L1867 L1867 L1867	- 6D - 6S		
	2GWWM3S 2GWWM4D 2GWWM4M 2GWWM4S	L1867- L1867- L1867- L1867-	- 4 - 9 - 3 - 8		
	2GWWM5D 2GWWM5M 2GWWM5S 2GWWM6D	L1867- L1867- L1867- L1867-	11		
	Were ICP interelement corrections ap	plied ?		Yes/No	YES
_	Were ICP background corrections appl			Yes/No	YES
	If yes - were raw data generate application of background corre	d before ctions ?		Yes/No	NO_
	Comments:TWENTY_WATER_SAMPLES_WERE_ANALYZDUPLICATE_ANALYSES_WERE_PERFORME	ED_FOR_TOTAL D_ON_SAMPLE_	METALS. M 2-GW-WM-3D	ATRIX_SPI (L1867-6)	KE_AND_
	(6) (4)				
	Written by : [6] (4)				
3	Date:				
	I certify that this data package is conditions of the contract, both tecother than the conditions detailed a in this hardcopy data package and in on floppy diskette has been authoriz Manager's designee, as verified by t	hnically and bove. Relea the compute ed by the La	l for complet se of the da r-readable of boratory Mai	teness, fo ata contai data submi	ined itted
	Reviewed by:	· 			
	Date:				

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

tb Name: L.A.S	Contract: WESTON	
ab Code: LOCK Case No.: 505WES	SAS No.:	SDG No.:L1867W
W No.: 3/90_		
CLIENT ID NO. 2DPWM1M 2FBWM5D 2GWWM1D 2GWWM1M 2GWWM2D 2GWWM2M 2GWWM2S 2GWWM3D 2GWWM3D 2GWWM3D 2GWWM3DS 2GWWM3DS 2GWWM3M 2GWWM4S 2GWWM4D 2GWWM4S 2GWWM4S 2GWWM5D	Lab Sample ID L1867-20 L1867-15 L1867-21 L1867-19 L1867-18 L1867-1 L1867-6 L1867-6 L1867-6 L1867-65 L1867-65 L1867-7 L1867-7 L1867-8 L1867-1 L1867-1 L1867-1	
Were ICP interelement corrections appl	ied ?	Yes/No YES
Vere ICP background corrections applied if yes - were raw data generated		Yes/No YES
application of background correct	cions ?	Yes/No NO_
Comments:TWENTY_WATER_SAMPLES_WERE_ANALYZEDDUPLICATE_ANALYSES_WERE_PERFORMED	FOR TOTAL METALS. MA ON_SAMPLE_2-GW-WM-3D_(TRIX SPIKE AND L1867-6).
Written by: Date:		
I certify that this data package is in conditions of the contract, both techn other than the conditions detailed about this hardcopy data package and in the confloppy diskette has been authorized Manager's designee, as verified by the (b) (4)	sically and for completove. Release of the da the computer-readable d by the Laboratory Man	eness, for ta contained ata submitted
Reviewed by (
Date:		

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

	Lab Name: L.E.S.A.T	Contract: WESTON	
	Lab Code: LOCK Case No.: 510WES	S SAS No.:	SDG No.:L1867W
	SOW No.: 3/90_ CLIENT ID NO. 2GWWM6M 2GWWM6S	Lab Sample IDL1867-13L1867-16	
			-
}	Were ICP interelement corrections app	olied ?	Yes/No YES
	Were ICP background corrections applied of yes - were raw data generated application of background corrections.	l before	Yes/No YES Yes/No NO_
	Comments:TWENTY_WATER_SAMPLES_WERE_ANALYZEDUPLICATE_ANALYSES_WERE_PERFORMED	ED_FOR_TOTAL_METALSMF D_ON_SAMPLE_2-GW-WM-3D_0	ATRIX_SPIKE_AND
	Written by :	Name:	-
1	Date:	Title:	
	I certify that this data package is is conditions of the contract, both tech other than the conditions detailed at in this hardcopy data package and in on floppy diskette has been authorize Manager's designee, as verified by the	nnically and for complet bove. Release of the da the computer-readable of ed by the Laboratory Man	teness, for ata contained data submitted
	Reviewed by:	Name:	
	Date:	Title:	

2 A (1+/94

Lockheed Analytical Laboratory SAMPLE SUMMARY REPORT (su02) Lionville Analytical Laboratory

Client	LAL	SDG	Method
Sample Number	Sample Number	Number Matrix	
2-DP-WM-1M	L1867-20	Water	CLP ICP
	L1867-20	Water	CLP ICP-MS METALS
	L1867-20	Water	CLP MERCURY
2-FB-WM-5D	L1867-15	Water	CLP ICP
	L1867-15	Water	CLP ICP-MS METALS
	L1867-15	Water	CLP MERCURY
2-GW-WM-1D	L1867-21	Water	CLP ICP
	L1867-21	Water	CLP ICP-MS METALS
	L1867-21	Water	CLP MERCURY
2-GW-WM-1M	L1867-19	Water	CLP ICP
	L1867-19	Water	CLP ICP-MS METALS
	L1867-19	Water	CLP MERCURY
2-GW-WM-1S	L1867-18	Water	CLP ICP
	L1867-18	Water	CLP ICP-MS METALS
	L1867-18	Water	CLP MERCURY
2-GW-WM-2D .	L1867-2	Water	CLP ICP
	L1867-2	Water	CLP ICP-MS METALS
	L1867-2	Water	CLP MERCURY
2-GW-WM-2M	L1867-1	Water	CLP ICP
	L1867-1	Water	CLP ICP-MS METALS
	L1867-1	Water	CLP MERCURY
2-GW-WM-2S	L1867-17	Water	CLP ICP
	L1867-17	Water	CLP ICP-MS METALS
	L1867-17	Water	CLP MERCURY
2-GW-WM-3D	L1867-6	Water	CLP ICP
	L1867-6	Water	CLP ICP-MS METALS
	L1867-6	Water	CLP MERCURY
	L1867-7	Water	NONE
2-GW-WM-3M	L1867-5	Water	CLP ICP
	L1867-5	Water	CLP ICP-MS METALS
	L1867-5	Water	CLP MERCURY
2-GW-WM-3S	L1867-4	Water	CLP ICP
	L1867-4	Water	CLP ICP-MS METALS
	L1867-4	Water	CLP MERCURY
2-GW-WM-4D	L1867-9	Water	CLP ICP
	L1867-9	Water	CLP ICP-MS METALS
	L1867-9	Water	CLP MERCURY
2-GW-WM-4M	L1867-3	Water	CLP ICP
	L1867-3	Water	CLP ICP-MS METALS
	L1867-3	Water	CLP MERCURY
2-GW-WM-4S	L1867-8	- Water	CLP ICP

Lockheed Analytical Laboratory SAMPLE SUMMARY REPORT (su02) Lionville Analytical Laboratory

Client	LAL	SDG	Method
Sample Number	Sample Number	Number Matrix	
	L1867-8	Water	CLP ICP-MS METALS
	L1867-8	Water	CLP MERCURY
2-GW-WM-5D	L1867-12	Water	CLP ICP
	L1867-12	Water	CLP ICP-MS METALS
	L1867-12	Water	CLP MERCURY
2-GW-WM-5M	L1867-11	Water	CLP ICP
	L1867-11	Water	CLP ICP-MS METALS
	L1867-11	Water	CLP MERCURY
2-GW-WM-5S	L1867-10	Water	CLP ICP
	L1867-10	Water	CLP ICP-MS METALS
	L1867-10	Water	CLP MERCURY
2-GW-WM-6D	L1867-14	Water	CLP ICP
	L1867-14	Water	CLP ICP-MS METALS
	L1867-14	Water	CLP MERCURY
2-GW-WM-6M	L1867-13	Water	CLP ICP
	L1867-13	Water	CLP ICP-MS METALS
	L1867-13	Water	CLP MERCURY
2-GW-WM-6S	L1867-16	Water	CLP ICP
	L1867-16	Water	CLP ICP-MS METALS
	L1867-16	Water	CLP MERCURY

Login Number: L1867
Account: 499 Lionville Analytical Laboratory
Project: WESTON-ICP-MS ICP MS project

Laborator Sample Nu				Client Sample Number	*	Collect Date	Receive Date PR	Due Date
L1867-1 temp 9				2-GW-WM-2M		02-MAY-94	07-MAY-94	04-JUN-94
Location:				7.00	nold.	29-OCT-94		
Water Water	1 1	_	CLP	ICP-MS METALS		29-0CT-94		
water Water	1			MERCURY		30-MAY-94		
L1867-2 temp 9				2-GW-WM-2D		02-MAY-94	07-MAY-94	04-JUN-94
Location:	RFG			TAD	77 a 3 æ .	20 000 04		
Water	_		CLP	ICP-MS METALS		29-OCT-94 29-OCT-94		
Water	1					30-MAY-94		
Water	1	5	CLP	MERCURY	HOIG:	30-MAI-94		
L1867-3 temp 9				2-GW-WM-4M		03-MAY-94	07-MAY-94	04-JUN-94
Location:	RFGO			_				
Water			CLP			30-0CT-94		
Water				ICP-MS METALS		30-OCT-94		
Water	1	S	CLP	MERCURY ;	Hold:	31-MAY-94		
L1867-4 temp 9				2-GW-WM-3S		02-MAY-94	07-MAY-94	04-JUN-94
Location:	RFGO	2-	-24B					
Water			CLP	ICP	Hold:	29-OCT-94		
Water	1	S	CLP	ICP-MS METALS	Hold:	29-OCT-94		
Water	1	S	CLP	MERCURY	Hold:	30-MAY-94		
L1867-5 temp 9				2-GW-WM-3M		02-MAY-94	07-MAY-94	04-JUN-94
Location:	RFG0							
Water			CLP					
Water				ICP-MS METALS				
Water	1	S	CLP	MERCURY				
L1867-6 temp 9;MS/ Location:		· 2	215	2-GW-WM-3D		02-MAY-94	07-MAY-94	04-JUN-94
Water			CLP	TCP				
Water				ICP-MS METALS				
re La La Carlo				MERCURY				

į.

Login Number: L1867
Account: 499 Lionville Analytical Laboratory
Project: WESTON-ICP-MS ICP MS project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date PR	Due Date
L1867-7 temp 9;MS/MSD Location: RFG02-2 Water 1 S N	2-GW-WM-3D 24B NONE	02-MAY-94	07-MAY-94	04-มีบท-:
Water 1 S C	2-GW-WM-4S 24B CLP ICP CLP ICP-MS METALS CLP MERCURY	03-MAY-94	07-MAY-94	04-Jün-!
Water 1 S C	2-GW-WM-4D 24B CLP ICP CLP ICP-MS METALS CLP MERCURY	03-MAY-94	07-MAY-94	·04-J0N-9
Water 1 S C	2-GW-WM-5S. 24B CLP ICP CLP ICP-MS METALS CLP MERCURY	04-MAY-94	07-MAY-94	04-JUN-9
Water 1 S C	2-GW-WM-5M 24B CLP ICP CLP ICP-MS METALS CLP MERCURY	04-MAY-94	07-MAY-94	04-JUN-9
Water 1 S C	2-GW-WM-5D 24B 2LP ICP 2LP ICP-MS METALS 2LP MERCURY	04-MAY-94	07-MAY-94	04-JUN-9
L1867-13 temp 9 Location: RFG02-2 Water 1 S 0	2-GW-WM-6M 24B CLP ICP	03-MAY-94	07-MAY-94	04-JUN-9,

Login Number: L1867
Account: 499 Lionville Analytical Laboratory
Project: WESTON-ICP-MS ICP MS project

Laborator Sample Nu	mper Y	Client Sample Number	Collect Receive Date Date pr	Due Date
Water Water		ICP-MS METALS MERCURY		
L1867-14 temp 9		2-GW-WM-6D	03-MAY-94 07-MAY-94	0.4-JUN-94
	RFG02-24B	7.00		(
Water	1 S CLP			
Water Water		ICP-MS METALS MERCURY	,	1
L1867-15 temp 9		2-FB-WM-5D	04-MAY-94 07-MAY-94	04-JUN-94
Location:		TOD		1
Water Water	1 S CLP 1 S CLP	ICP-MS METALS		*
Water		MERCURY		
L1867-16 temp 9		2-GW-WM-65	04-MAY-94 07-MAY-94	04-JUN-94
Location:	RFG02-24B			ſ
Water	1 S CLP			1
Water		ICP-MS METALS MERCURY		
Water	1 S CLP	MERCURI		1
L1867-17		2-GW-WM-25	05-MAY-94 07-MAY-94	04-JUN-94
temp 9	RFG02-24B			-4
Water	1 S CLP	ICP		1
Water		ICP-MS METALS		
Water	1 S CLP	MERCURY		
L1867-18		2-GW-WM-1S	05-MAY-94 07-MAY-94	04-JUN-94
temp 9				100
Location:	RFG02-24B			_
Water	1 S CLP			
Water Water		ICP-MS METALS MERCURY		(
MALEI	I 2 CUP	PERCURI		
L1867-19		2-GW-WM-1M	05-MAY-94 07-MAY-94	04-JUN-94
temp 9	,			-
	RFG02-24B			
Water	1 S CLP	ICP-MS METALS		1
Water Water		MERCURY		1
Hatel	I S CLIP	FILICONI		

Login Number: L1867
Account: 499 Lionville Analytical Laboratory .
Project: WESTON-ICP-MS ICP MS project

L1867-20 temp 9				2-DP-WM-1M	05-MAY-94	07-MAY-94	04-JUN-9
Location:	RFG	02.	-24B				
Water	1	S	CLP	ICP			
Water	1	S	CLP	ICP-MS METALS			
Water	1	S	CLP	MERCURY			
L1867-21 temp 9				2-GW-WM-1D	05-MAY-94	07-MAY-94	04-JUN-9
Location:	RFG	02-	-24B			•	
Water	1	S	CLP	ICP			
Water	1	S	CLP	ICP-MS METALS			
Water	1	S	CLP	MERCURY			

Page 4

Signature:

Date:

0577499

Sample Login

Login Review Checklist

Lot Number <u>L1867</u>

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Pleasing and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For an effective login review, at a minimum, five reports from the login process are required. These are the chain of custody (or equivalent), the login chain of custody report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning a review, ensure that these five components are available. For jobs with single component samples, the sample summary report may be ommitted.

Sami N/A	ole Summary Report		•	Yes No
1. 2. 3. 4. 5.	Are analyses logged in for (e.g., analyses requiring preservation to Are samples logged in according	CLP teachage, field be lain of custody or the correct or the correct or the correct or the cording to laborate to	/login quotation included?	X
Login	Chain of Custody Report			
1. 2.	Are the Collect, Receive, Have appropriate sample of the Collect, MS/MSD designation, comments	omments been		х л
Sampl	e Receiving Checklist			
1.	Are any discrepancies betw	veen the chain	of custody and the login note s. samples not seem break	d? X
(b)	(4)	<u>5-9-94</u>	(b) (4)	ld May 94
	Primary review signature	Date	Secondary review signature	Date

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LOCKHEED ANALYTICAL SERVICES SAMPLE RECEIVING CHECKLIST

Client Name: Weston	Job	Name: 4867	-
COOLER CONDITION UPON I	RECEIPT		•
- temperature of cooler upon receipt:	11.0		_
•	YES NO	COMMENTS/DISCREPANCIES*	
- custody seals intact	<u>X</u> _		
- chain of custody present	<u> </u>		
- blue ice (or equiv.) pres. & frozen	X	blue ice inaficient	
- Rud Survey completed			
SAMPLE CONDITION UPON R	ECEIPT	•	
•	YES NO	COMMENTS/DISCREPANCIES*	
- all bottles labeled	*	·	
- samples intact	<u>x</u> —		
- samples agree with the COC	<u>x</u> —		
- proper container for sample type	7 -		
- sample volume sufficient for analysis	\frac{1}{x} -		
- proper pres. used and indicated	_ 4		
_ VOA's contain headspace		NA	
MISCELLANEOUS ITEMS	YES NO	COMMENTS/DISCREPANCIES*	
- samples with short holding times	X		
(48 hours or less) - samples to subcontract	$-\frac{\lambda}{2}$		
ADDITIONAL COMMENTS/DISCREP	ANCIES		
(b) (4) Completed by:	Date: 5-9	94	
* Immediately notify the Client Service l	Department stat	T of any discrepancies identified for this client's s	amples 0 57.74°

LOCKHEED ANALYTICAL SERVICES SAMPLE RECEIVING CHECKLIST

Client Name: Weston		Job 1	Name: LI867
COOLER CONDITION UPON	RECEI	PT	•
- temperature of cooler upon receipt:_	9	-ر	
	YES	NO	COMMENTS/DISCREPANCIES*
- custody seals intact	$\overline{\chi}$		
- chain of custody present	X		
- blue ice (or equiv.) pres. & frozen		X	blue ice insufficient
- Rad Survey completed	X	. —	
SAMPLE CONDITION UPON R	RECEI	т	•
	YES	NO	COMMENTS/DISCREPANCIES*
- all bottles labeled	X		
- samples intact	X		
- samples agree with the COC	x		
- proper container for sample type	k		
- sample volume sufficient for analysis	x		
- proper pres. used and indicated	X		
_ VOA's contain headspace .		_	NA
MISCELLANEOUS ITEMS			
	YES	NO	COMMENTS/DISCREPANCIES*
- samples with short holding times (48 hours or less)		X	
- samples to subcontract		X	
ADDITIONAL COMMENTS/DISCREF	ANCIES		
11 m -M			- <u>0</u> U
Completed by: MM D	Date:_	<u> </u>	1-94

C527499

^{*} Immediately notify the Client Service Department staff of any discrepancies identified for this client's samples

CLIENT ID NO.

Lab Name: L.B.	S.A.T		Contract: W	ESTON	2DPWM1M				
Lab Code: LOCK	Ca	se No.: 51	OWES SAS No.	:	SDG No.: L1867W				
Matrix (soil/w	ater): WATE	R		Lab Sampl	e ID: L1867-20				
Level (low/med): LOW_	_		Date Rece	ived: 05/07/94				
% Solids:0.0									
Concentration Units (ug/L or mg/kg dry weight): UG/L_									
	CAS No.	Analyte	Concentration	C Q	M (
	7429-90-5	Aluminum	78.9		MS				
	7440-36-0 7440-38-2	Antimony_ Arsenic	1.0	U I	MS MS				
	7440-39-3	Barium	520	- <u> </u>	MS				
	7440-41-7				MS				
	7440-43-9 7440-47-3		$\frac{1.0}{2.0}$	[U] ——— [F	MS ·				
	7440-48-4	Cobalt	2.6	B B	AS AS				
	7440-50-8		1.8	$ \mathbf{B} $ —— $ \mathbf{B} $	4S				
	7439-89-6	Iron	57700	* 1	45				
	7439-92-1		1.0	<u> </u>	4S				
	7439-96-5	Manganese	7430	= ½	4S (
	7440-02-0 7782-49-2		6.7	B	1S 1S				
	7440-22-4				15 15				
	7440-28-0	Thallium	1.0	U N	45				
	7440-62-2	Vanadium	1.0	ŭ Ñ					
		Zinc	12.2	B N	4 S				
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Color Before:	COLORLESS	Clarit	y Before: CLEA	LR_ T	Cexture:				
Color After:	COLORLESS	Clarit	y After: CLEA	IR_ A	rtifacts:				
Comments:									

CLIENT ID NO.

b Name: L.A	.s		Contract: W	eston	2DPWM1M
					SDG No.: L1867W
ıtrix (soil/v	water): WATE	R		Lab Sampl	e ID: L1867-20
evel (low/med	d): LOW_	_		Date Rece	eived: 05/07/94
Solids:	0.	0			
Co	oncentration	Units (ug	/L or mg/kg dr	y weight):	UG/L_
	CAS No.	Analyte	Concentration	C Q	м
	7440-70-2 7439-95-4 7439-97-6 7440-09-7 7440-23-5	Calcium Magnesium Mercury Potassium Sodium	0.20	<u></u>	P
Color Before:	COLORLESS	Clarit	y Before: CLE	LR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLEA	LR_	Artifacts:
Comments:					

CLIENT ID NO.

]	Lab Name: L.E.	S.A.T		Contract: W	eston	2FBWM5D
100	Lab Code: LOCK	Ca	se No.: 51	OWES SAS No.	:	SDG No.: L1867W
3	Matrix (soil/w	water): WATE	R		Lab Samp	le ID: L1867-15
	Level (low/med	l): LOW_	_		Date Rec	eived: 05/07/94
	% Solids:	0.	0			
	Co	ncentration	Units (ug	/L or mg/kg dry	y weight)	: UG/L_
200		CAS No.	Analyte	Concentration	c o	M
		7429-90-5	Aluminum_	42.3		MS MS
		7440-38-2 7440-39-3 7440-41-7 7440-43-9	Antimony_ Arsenic_ Barium_ Beryllium Cadmium_ Chromium		ם ם	MS MS MS MS MS
1		7440-48-4	Cobalt	1.0	U	MS MS
J.		7439-89-6	Copper	1.6	U *	MS
1		7439-96-5	Lead_ Manganese	1.0	ש	MS MS
9		7440-02-0 7782-49-2	Nickel Selenium	1.0 3.0	u	MS MS
1		7440-22-4	Silver Thallium	1.0	"ע	MS MS
)			Vanadium_ Zinc	1.0	u	MS MS
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1						<u> </u>
,					-	<u> </u>
	Color Before:	COLORLESS	Clarit	y Before: CLE	AR_	Texture:
ž.	Color After:	COLORLESS	Clarit	y After: CLEA	AR_	Artifacts:
	Comments:					
			-			

CLIENT ID NO.

ah 31	amor I. A	c		Contract. W			2 FBWM5D
				Contract: W			
				SWES SAS No.	:		SDG No.: L1867W
atri	x (soil/w	ater): WATE	R		Lab	Samp	le ID: L1867-15
evel	(low/med	l): LOW_	_		Dat	e Rec	eived: 05/07/94
Sol	ids:	0.	0				
	Co	ncentration	Units (ug	/L or mg/kg dr	y we	ight)	: UG/L_
		CAS No.	Analyte	Concentration	c	Q	м
•		7440-70-2 7439-95-4	Calcium Magnesium	134			P P
•		7439-97-6	Mercury	0.20	[ט]		Α₹
		7440-09-7 7440-23-5	Potasslum Sodium	522 613			P_ P_
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Color	Before:	COLORLESS	Clarit	y Before: CLE	AR_		Texture:
Color	After:	COLORLESS	Clarit	y After: CLE	AR_		Artifacts:
Commer	nts:						
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-	<u> </u>						

CLIENT ID NO.

	Lab Name: L.E.	S.A.T		Contract: W	est	ON		2GWW	M1D
Ting .	Lab Code: LOCK	Ca	se No.: 51	OWES SAS No.	: _		SDG	No.:	L1867W
16	Matrix (soil/w								67-21
	Level (low/med): LOW_	_			te Rec			
	% Solids:	0.0	0						
	Con	ncentration	Units (ug,	/L or mg/kg dr	y w	eight)	: UG/1	և_	
		CAS No.	Analyte	Concentration	c	Q	M		
		7429-90-5	Aluminum_	1910	- - -	N*	MS		
ı		7440-38-2 7440-39-3		$\frac{2.0}{28.4}$	1 1		MS MS MS		
		7440-41-7 7440-43-9		1.0	 		MS MS		
10		7440-47-3 7440-48-4	Chromium		lB		MS		•
		7440-50-8	Copper	2.6	B -	,	MS MS		
		7439-89-6	Iron	518 1.5	- -	_*	MS		
ı			Manganese	31.4	B -		MS MS		
		7440-02-0			률/-		MS		
			Selenium_	3.0	ן ט ן		MS		
1		7440-22-4		1.0	ַ ט		MS		
L		7440-28-0 7440-62-2	Thallium_	1.0			MS		
		7440-62-2	Zinc	51.4	- -		MS MS		
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	Color Before:	RED	Clarit	y Before: CLE	AR_		Textu	re:	
,	Color After:	COLORLESS	Clarit	y After: CLE	AR_		Artif	acts:	
	Comments:								
}									_

CLIENT ID NO.

ab Name: L.A.	s		Contract: W	eston	2GWWM1D			
ab Code: LOCK	Ca	se No.: 50	SWES SAS No.	:	SDG No.: L1867W			
Latrix (soil/w	water): WATE	R		Lab Sampl	e ID: L1867-21			
evel (low/med): LOW Date Received: 05/07/94								
; Solids:	0.	0						
Concentration Units (ug/L or mg/kg dry weight): UG/L_								
	CAS No.	Analyte	Concentration	C Q	м			
	7440-70-2 7439-95-4 7439-97-6 7440-09-7 7440-23-5	Magnesium Mercury Potassium	0 20	<u> </u>	P-AV P			
Color Before:	COLORLESS	Clarit	y Before: CLEA	AR_ 1	Texture:			
Color After:	COLORLESS	Clarit	y After: CLEA	AR_ I	Artifacts:			
Comments:								

	1		
INORGANIC	ANALYSES	DATA	SHEET

CLIENT ID NO.

	Lab Name: L.E.	S.A.T		Contract: V	veston	2GWWM1M	
1	Lab Code: LOCK_ Case No.: 510WES SAS No.: SDG No.: L1867						
	Matrix (soil/w	ater): WATE	R		Lab Sampl	e ID: L1867-19	
Level (low/med): LOW Date Received: 05/07							
9	% Solids:	0.0	0				
	Со	ncentration	Units (ug	/L or mg/kg dr	y weight):	UG/L_	
7		CAS No.	Analyte	Concentration	C Q	м	
}		7429-90-5	Aluminum	125		MS	
		7440-36-0 7440-38-2 7440-39-3 7440-41-7 7440-43-9 7440-47-3 7440-48-4	Antimony_ Arsenic_ Barium_ Beryllium Cadmium_ Chromium_ Cobalt_	8.9 517 1.0 1.0 2.9 2.8	U	MS MS MS MS MS MS	
		7439-89-6 7439-92-1 7439-96-5	CopperIron Lead Manganese Nickel Selenium Silver	1.6 5110 1.0 7610 7.3 3.0	<u> </u>	MS MS MS MS MS MS MS	
		7440-22-4 7440-28-0 7440-62-2 7440-66-6	Thallium	1.0 1.0 1.1 12.2	. B 1	MS MS MS	
					<u> -</u>	_	
						_	
					-	_	
	Color Before:	COLORLESS	Clarit	y Before: CLE	AR_	Texture:	
	Color After:	COLORLESS	Clarit	y After: CLE	AR_	Artifacts:	
	Comments:						
			_				

CLIENT ID NO.

				MOILIE INVESTIGATION DAIN DIMET				
ıb N	ame: L.A.	s		Contract: W	BST	ON	2GWWM1M	
ib Code: LOCK Ca			se No.: 505WES SAS No.:				SDG No.: L1867W	
itri	x (soil/w	ater): WATE	R	R Lab Sampl			le ID: L1867-19	
evel	(low/med	.): LOW_	_		Dа	te Rec	eived: 05/07/94	
Sol	ids:	0.	0					
	Co	ncentration	Units (ug	/L or mg/kg dry	y w	eight)	: UG/L_	
		CAS No.	Analyte	Concentration	С	Q	м	
		7440-70-2		38900			व	
		7439-95-4 7439-97-6	Magnesium Mercury	23500	ਜ਼		P AV	
		7440-09-7	Mercury Potassium	4140			P P	
		7440-23-5	Sodium	71000	-		P_	
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Color	Before:	COLORLESS	Clarit	y Before: CLE	LR_		Texture:	
Color	After:	COLORLESS	Clarit	y After: CLE	LR_		Artifacts:	
Comme	nts:							
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INORGANIC	ANALYSES	DATA	SHEET

CLIENT ID NO.

Lab Name: L.E.	S.A.T		Contract: V	æs'	TON		2GWWM1S	
Lab Code: LOCK	Ca	se No.: 51	OWES SAS No.	: .		SDG	No.: L1867	/W
Matrix (soil/w	ater): WATE	R		L	ab Samp	le ID	: L1867-18	
Level (low/med	i): LOW_	_		D	ate Rec	eived	: 05/07/94	
% Solids:	0.	0						
Co	ncentration	Units (ug	/L or mg/kg dr	.y '	weight)	: UG/1	L _.	
	CAS No.	Analyte	Concentration	c	Q	M		
	7429-90-5		1270		N*	MS		
	7440-36-0 7440-38-2	Antimony_ Arsenic	1.8	ו עו		MS MS		
	7440-39-3	Barium Beryllium	42.0	1		MS MS		
	7440-43-9	Cadmium_	1.0	ן ש		MS		
		Chromium_	5.9	B		MS	,	
		Cobalt Copper	3.1	B		MS MS		
	7439-89-6	Iron	376		*	MS		
		Lead	8.5			MS		
		Manganese Nickel	154 10.7	Ā		MS MS		
	7782-49-2	Selenium	3.0	Ū		MS		
	7440-22-4	Silver	1.0			MS		
		Thallium_ Vanadium	1.0			MS MS		
		Zinc	36.4	P		MS		
				. _				
				$\cdot - $		 		
				· -				
				. _				
Color Before:	COLORLESS	Clarit	y Before: CLE	AR_	-	Textu	ire:	
Color After:	COLORLESS	Clarit	y After: CLE	AR_	-	Artif	facts:	_
Comments:								
				_				

CLIENT ID NO.

ab Name: L.A.	s		Contract: W	est	'ON	2GWWM1S
				: _		SDG No.: L1867W
atrix (soil/w	water): WATE	R		La	b Samp	le ID: L1867-18
evel (low/med	l): LOW_	_				 eived: 05/07/94
Solids:	0.	0				
Co	oncentration	Units (ug	/L or mg/kg dry	y w	eight)	: UG/L_
	CAS No.	Analyte	Concentration	С	Q	м
	7440-70-2 7439-95-4 7439-97-6 7440-09-7 7440-23-5	Magnesium	18300 3870 0.20 4480 3860	- .		P_ P_ AV P_ P
Color Before:	COLORLESS	Clarit	y Before: CLEA	R_		Texture:
Color After:	COLORLESS	Clarit	y After: CLEA	R_		Artifacts:
Comments:						

CLIENT ID NO.

	Lab Name: L.E.	S.A.T		Contract: W	ESTON	2GWWM	2D
	Lab Code: LOCK	Ca	se No.: 51	OWES SAS No.	:	SDG No.:	L1867W
	Matrix (soil/w	ater): WATE	R		Lab Sampl	e ID: L186	7-2
D	Level (low/med): LOW_			Date Rece	ived: 05/0	7/94
	% Solids:	0.	0				
	Co	ncentration	Units (ug	/L or mg/kg dr	y weight):	UG/L_	
		CAS No.	Analyte	Concentration	c Q	м	
		7429-90-5 7440-36-0	Aluminum_ Antimony_	89.2 1.0	<u>B</u> N*	MS MS	
B		7440-38-2	Arsenic	2.0	(U) ———	MS	
		7440-41-7	Barium Beryllium	27.8 1.0	 	MS MS	
			Cadmium_ Chromium	1.0	u	MS MS	-
			Cobalt	5.9	B 1	MS	
		7440-50-8 7439-89-6	Copper	8.0 129	^B - ;	MS (MS	
ı.		7439-92-1	Lead	1.4		MS	
Ř.			Manganese	53.9		MS	
			Nickel	13.0	B	MS	
			Selenium_ Silver	3.0		MS MS	
			Thallium		اً اق	MS	
J.		7440-62-2		1.1	B 1	MS	
		7440-66-6	Zinc	66.0	_ [1	MS	
					- -	 ∤	
)					- -	<u> </u>	
					- -	-	
						{	
l					-		
	Color Before:	COLORLESS	Clarit	y Before: CLE	AR_	Texture:	
	Color After:	COLORLESS	Clarit	y After: CLE	AR_ Z	Artifacts:	
	Comments:						
					_		

CLIENT ID NO.

		THOROTALE	MANUAL DATA		
ab Name: L.A.	s		Contract: W	eston	2GWWM2D
					SDG No.: L1867
trix (soil/w	_				le ID: L1867-2
vel (low/med					eived: 05/07/94
Solids:		_			
			/L or mg/kg dr	weight)	• IIG/I.
	1————		l or may kee	weight,	. UG/ I_
	CAS No.	Analyte	Concentration	C Q	м
	7440-70-2		12500		<u>P</u>
	7439-97-6	Magnesium Mercury_	0.20	₩	p− AV
	7440-09-7 7440-23-5	Potassium Sodium	2910 26000		P_ P_
					
					_
				-	_
				-	
		\ 			<u> — </u>
				_	<u> </u>
1					<u> </u>
lor Before:	COLORLESS	Clarit	y Before: CLR	AR_	Texture:
lor After:	COLORLESS	Clarit	y After: CLE	AR_	Artifacts:
mments:					

CLIENT ID NO.

2GWWM2M

Lab Name: L.E.	.S.A.T		Contract: W	ESTON	
Lab Code: LOCI	C Ca	se No.: 51	OWES SAS No.	:	SDG No.: L1867W
Matrix (soil/w	water): WATE	R		Lab Samp	ole ID: L1867-1
Level (low/med	i): Low_	_		Date Rec	ceived: 05/07/94
% Solids:	0.	0			
Co	oncentration	Units (ug	/L or mg/kg dr	v weight)	: UG/L
			, J, J		
	CAS No.	Analyte	Concentration	C Q	M
	7429-90-5	Aluminum_	68.5	BN*	MS
	7440-38-2	Antimony_ Arsenic_	29.6		MS MS
	7440-39-3 7440-41-7	Barium_ Beryllium	1350	[T	MS MS
	7440-43-9	Cadmium_ Chromium	1.0	<u>"</u>	MS MS
	7440-48-4	Cobalt -	8.7	B	(MS)
	7439-89-6	Copper	1.6 7760	*	MS MS
		Lead Manganese	1.0	[₸	MS MS
	7440-02-0	Nickel	12.2	<u> </u>	MS
	7440-22-4	Selenium_ Silver	3.0	[법	MS MS
	7440-28-0 7440-62-2	Thallium_ Vanadium	1.0 1.0 1.0	ט -	MS MS
	7440-66-6	Zinc	15.4	B	MS
				-	
				_	
Color Before:	AELTOM	Clarit	y Before: CLEA	NR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLEA	AR_	Artifacts:
Comments:					

CLIENT ID NO.

Lab Name: L.A.	s		Contract: W	eston	2GWWM2M
					SDG No.: L1867W
Matrix (soil/w					e ID: L1867-1
Level (low/med					eived: 05/07/94
k Solids:		_			20,01,01
			/L or mg/kg dry	y weight):	UG/L_
	CAS No.	Analyte	Concentration	C Q	M
	7440-70-2 7439-95-4 7439-97-6 7440-09-7 7440-23-5	Calcium Magnesium Mercury Potassium Sodium	0.20		P
Color Before:	COLORLESS	Clarit	y Before: CLEA	AR_	Texture:
			_	_	Artifacts:
Comments:					

		THORGANIC	MIADISES DAIN	Idanc	
Inh Names I	F C N T		Contract. W	ESTAN	2GWWM2S
			Contract: W		
Lab Code: LC	CK Ca	use No.: 51	OWES SAS No.	:	SDG No.: L1867
Matrix (soil	/water): WATE	IR		Lab Sampl	le ID: L1867-17_
Level (low/m	ed): LOW_	_		Date Rece	eived: 05/07/94
% Solids:	0.	0			
	Concentration	Units (ug	/L or mg/kg dry	y weight):	UG/L_
	CAS No.	Analyte	Concentration	C Q	м
	7429-90-5	Aluminum_	54.3		MS
	7440-36-0		1.0		MS
	7440-38-2 7440-39-3	Barium	604	-	MS MS
	7440-41-7	Beryllium	604	😈	MS
	7440-43-9	Cadmium	1.0	ן ט	MS .
	7440-47-3	Chromium_	4.3	B	MS
	7440 - 48 - 4 7440 - 50 - 8	Copper	4.2	 — —	MS MS
	7439-89-6	Iron	58400	-	MS
	7439-92-1		1.6	B	MS
	7439-96-5	Manganese	<u>15</u> 100		MS
	7440-02-0		27.3		MS
	7782-49-2 7440-22-4		3.0	u	MS MS
	7440-28-0		1.0	ااقا	MS
	7440-62-2	Vanadium	1.5	B	MS
	7440-66-6	Zinc	20.4		MS
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		. i		_	
Color Before	YELLOW	Clarit	y Before: CLEA	JR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLEA	NR_	Artifacts:
Comments:					
	_				
		FC	ORM I - IN		

CLIENT ID NO.

ab Name: L.A.	S		Contract: W	EST	ON	2GWWM2S
						SDG No.: L1867W
Matrix (soil/w	ater): WATE	R		Lal	b Sampi	le ID: L1867-17
Level (low/med): LOW					eived: 05/07/94
s Solids:	0.	_				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
			/L or mg/kg dry		eiaht)	· 11G/1.
CC	1————	1	, i or mg/ng dr	, ,		
	CAS No.	Analyte	Concentration	c	Q	M
	7440-70-2	Calcium_	174000	<u>- -</u>		
	7439-95-4 7439-97-6	Magnesium Mercury Potassium	64100	ਹ -		P A ▼
	7440-09-7 7440-23-5	Potassium Sodium	5350 81000	-		P_ P_
			01000	<u>-</u> -		,
				- -		 -
				<u> </u>		
				- -		<u> -</u>
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				<u>-</u> -		
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				_ -		
				- -		_
				_ _		
Color Before:	COLORLESS	Clarit	y Before: CLEA	LR_		Texture:
Color After:	COLORLESS	Clarit	y After: CLEA	AR_		Artifacts:
Comments:						

Lab Name: L.E	.S.A.T	2GWWM3D Contract: WESTON				
Lab Code: LOC	K Ca	se No.: 510	WES SAS No.	:	SDG No.: L1867W	
Matrix (soil/	water): WATE	R		Lab Sampl	e ID: L1867-6	
Level (low/med	d): LOW_	_		Date Rece	ived: 05/07/94	
% Solids:	0.	0				
Co	oncentration	Units (ug/	L or mg/kg dr	y weight):	UG/L_	
	CAS No.	Analyte	Concentration	C Q	м	
	7440-41-7 7440-43-9 7440-47-3 7440-48-4 7440-50-8 7439-89-6 7439-96-5 7440-02-0 7782-49-2 7440-22-4 7440-62-2 7440-66-6	Zinc	4.3 11.1 1080 2.5 49.7 12.6 3.0 1.0 8.7 58.2	D U B B U U B B U U B B U U B B U U B B U D D D D	MS MS MS MS MS MS MS MS MS MS MS MS MS M	
Color Before:	ORANGE	Clarit	y Before: CLE	IR_	Texture:	
Color After:	COLORLESS	Clarit	y After: CLEA	AR_	Artifacts:	
Comments:						

CLIENT ID NO.

ab Name: L.A.	S		Contract: W	ESTOI	N	2GWWM3D
ab Code: LOCK	Ca	se No.: 50	5WES SAS No.	:		SDG No.: L1867W
atrix (soil/w	ater): WATE	R		Lab	Sampl	e ID: L1867-6
evel (low/med): LOW_	_		Date	e Rece	ived: 05/07/94
: Solids:	0.	0				
Co.	ncentration	Units (ug	/L or mg/kg dry	y we:	ight):	UG/L_
	CAS No.	Analyte	Concentration	С	Q	м
	7440-70-2	Calcium	14300	- -		<u>P</u>
	7439-95-4	Magnesium Mercury_	5000	ਜੁ		P ⁻ A Ū
	7440-09-7	Potassium	4440	_ _		P
	7440-23-5	Sodium	85700	- -		P
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Color Before:			_	_		Texture:
Color After:	COLORLESS	Clarit	y After: CLRA	LR_	1	Artifacts:
Comments:						

CL	IENT	ID	NO
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Lab Name: L.E	.S.A.T.		Contract: W	ESTON	2GWWM3M
					SDG No.: L1867W
Matrix (soil/	water): WATE	R		Lab Sampl	e ID: L1867-5
Level (low/med	d): LOW_	_		Date Rece	ived: 05/07/94
% Solids:	0.	0			
Co	oncentration	Units (ug	/L or mg/kg dry	y weight):	UG/L_
•	CAS No.	Analyte	Concentration	C Q	M
	7440-38-2 7440-39-3 7440-41-7 7440-43-9 7440-47-3 7440-48-4 7440-50-8	Antimony_ Arsenic_ Barium_ Beryllium Cadmium_ Chromium_ Cobalt_ Copper	1.0 4.4 3.6 2.9	U	MS MS MS MS MS MS MS MS MS
	7439-89-6 7439-92-1 7439-96-5 7440-02-0 7782-49-2 7440-28-0 7440-62-2 7440-66-6	Iron Lead Manganese Nickel Selenium Silver	2560 1.0 634 14.0 3.0 1.0 1.0 3.0 37.1	D U U U B	MS MS MS MS MS MS MS MS
Color Before:	AETFOM	Clarit	y Before: CLEA	LR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLEA	LR_	Artifacts:
Comments:					

CLIENT ID NO.

		THOROPHIE	MANUEL DAIR	orte to t	
ab Name: L.A	.s		Contract: W	eston	2GWWM3M
ab Code: LOCI	. Ca	se No.: 50	5WES SAS No.	:	SDG No.: L1867W
atrix (soil/	water): WATE	R		Lab Samp	le ID: L1867-5
evel (low/med	i): LOW_	_		Date Rec	eived: 05/07/94
Solids:	0.	0			
Co	oncentration	Units (ug	/L or mg/kg dr	y weight)	: UG/L_
	CAS No.	Analyte	Concentration	C Q	м
	7440-70-2 7439-95-4	Calcium Magnesium	109000		$\left \frac{\overline{\mathbf{p}}}{\mathbf{p}} \right $
	7439-97-6	Mercury	0.20	ש	Ā₹
	7440-09-7 7440-23-5	Potassium Sodium	8160 23200	-	P_P
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		l———		-	-
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				-	
	1			l_l	ll
			ty Before: CLE	_	Texture:
Color After:	COLORLESS	Clari	ty After: CLE	AR_	Artifacts:
Comments:					

CLIENT	TD	NTO
CHIENI	LD	NU

Lab Name: L.E.	S.A.T.		Contract: W	ES	TON		2GWWM3S
			OWES SAS No.			SDG	No.: L1867
Matrix (soil/w							: L1867-4
Level (low/med	_	_		ט	ate kece	ivea	: 05/07/94
% Solids:	0.	0					
Co	ncentration	Units (ug	/L or mg/kg dr	Y	weight):	UG/	ւ_
	CAS No.	Analyte	Concentration	С	Q	M	
	7429-90-5	Aluminum	269]_		MS	
	7440-36-0	Antimony	1.0	ΙĦ		MS	
	7440-38-2 7440-39-3	Arsenic	9.8	l —		MS	
		Beryllium	1.0	ੀ ਹ ਿ		MS MS	
	7440-43-9	Cadmium	1.0 1.0 7.4	Ŭ		MS	_
	7440-47-3 7440-48-4	Chromium_	7.4	B		MS	•
	7440-50-8		4.9	B		MS MS	
	7439-89-6		5180	ļ		MS	
	7439-92-1		1.9	B		MS	
	7439-96-5	Manganese	1280	등		MS	
	7782-49-2		3.0			MS MS	
	7440-22-4	Silver	1.0	D.		MS (
	7440-28-0	Thallium_	1.0	n		MS	
	7440-62-2 7440-66-6	Zinc	37.3	B		MS MS	
	7110 00 0			-		ן בביי	
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Color Before:	AETFOM	Clarit	y Before: CLE	AR_	-	Textu	re:
Color After:	COLORLESS	Clarit	y After: CLE	NR_	_	Artif	acts:
Comments:							
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CLIENT	ID	NO.
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		INORGANIC .	ANALISES DATA	SHEET	
ab Name: L.A	.s		Contract: W	eston	2GWWM3S
					SDG No.: L1867
atrix (soil/v	water): WATE	SR.		Lab Sam	ple ID: L1867-4
evel (low/med	i): LOW_	_		Date Red	ceived: 05/07/94
Solids:	0.	0			
Co	oncentration	Units (ug	/L or mg/kg dry	y weight)): UG/L_
	CAS No.	Analyte	Concentration	C Q	M
	7440-70-2		170000		= =
	7439-95-4 7439-97-6	Magnesium Mercury_	74700	<u>u</u> -	P AV
	7440-09-7 7440-23-5	Potassium Sodium	12900 28300	_	P P
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				-\-	- -
					-
lor Before:				\R	Texture:
lor After:	COLORLESS	Clarit	y After: CLEA	LR_	Artifacts:
mments:					

Lab Name: L.E.	S.A.T		Contract: W	ESTON	2GWWM4D
Lab Code: LOCK	Ca	se No.: 51	OWES SAS No.	:	SDG No.: L1867W
Matrix (soil/w					e ID: L1867-9
Level (low/med	l): LOW_				eived: 05/07/94
% Solids:	o.	0			
Co	ncentration	Units (ug	/L or mg/kg dr	y weight):	UG/L_
	CAS No.	Analyte	Concentration	c Q	м
	7429-90-5	Aluminum_	817		MS
	7440-36-0 7440-38-2	Antimony_ Arsenic	2.0	ן טו	MS MS
		Barium	32.0		MS
	7440-41-7 7440-43-9		1.0	뛰	MS MS
	7440-47-3	Chromium	5.6	B	MS
	7440-48-4	Cobalt	1.8	B	MS
	7440-50-8	Copper	13.5		MS
	7439-89-6	Iron	804		MS
	•	Lead Manganese	53.4		MS MS
		Nickel	16.0		MS
	7782-49-2		3.0	ן	MS
	7440-22-4	Silver	1.0	ן די	MS
	7440-28-0		1.0		MS
	7440-62-2	Vanadium_	8.6		MS
	7440-66-6	Zinc	68.3	-	MS ·
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				_	_
Color Before:			y Before: CLE	_	Texture:
Color After:	COLORLESS	Clarit	y After: CLEA	AR_	Artifacts:
Comments:					

ab Name: L.A	S		Contract: W	ESTON	2GWWM4D
					SDG No.: L1867W
Matrix (soil/	water): WATE	R		Lab Samp	ole ID: L1867-9
evel (low/me	d): LOW_	_		Date Rec	ceived: 05/07/94
Solids:	0.	0			
С	oncentration	Units (ug,	/L or mg/kg drj	y weight)	: UG/L_
	CAS No.	Analyte	Concentration	C Q	м
	7439-95-4	Calcium_ Magnesium Mercury Potassium Sodium_	0.20	-	P P P P P P P P P P P P P P P P P P P
color Before:	COLORLESS	Clarit	y Before: CLEA	_ \	Texture:
olor After:	COLORLESS	Clarit	y After: CLEA	LR_	Artifacts:
omments:					
Color Before: Color After:			_	-	

Lab Name: L.E.S.A.T		Contract: WE	STON	2GWWM4M
Lab Code: LOCK	Case No.: 510W	ES SAS No.:		SDG No.: L1867W
Matrix (soil/water): W	ATER		Lab Sample	e ID: L1867-3
Level (low/med): LC	OW.			 ived: 05/07/94
	0.0			
	-	au ma/lau d	• ********	TTO /T
Concentrati	lon Units (ug/L	or mg/kg dry	weight):	
CAS No.	Analyte C	oncentration	C Q	4
7429-90-	5 Aluminum_	22.0		MS .
7440-36- 7440-38-	O Antimony	1.0		15 15
7440-39-	3 Barium -	1120		45
	7 Beryllium _	1.0	U	as As
7440-47-	3 Chromium	2.0	ע ע	AS .
7440-48-	4 Cobalt	9.5	B	as
7440-50- 7439-89-	8 Copper	1.1 5460		1S 1S
7439-89-		1.0	<u></u>	1S 1S
7439-96-	5 Manganese	131		4S)
	0 Nickel	15.7	B	AS .
7782 - 49 - 7440 - 22 -	2 Selenium	3.0	<u>'</u> । ਨੈ	as As
7440-28-	0 Thallium	1.0	U N	as)
	2 Vanadium _	1.0	U N	AS
7440-66-	6 Zinc	14.9	B - M	18
	- -		-	-
				_
	-		_	
	- -	 -	- -	
				<u>_</u> [
Color Before: COLORLES	S Clarity	Before: CLEA	R_ 1	Cexture:
Color After: COLORLES	S Clarity	After: CLEA	R_ A	rtifacts:
Comments:				

CLIENT ID NO.

			ANALISES DATA		
ab Name: L.A	.s		Contract: W	ESTON	2GWWM4M
					SDG No.: L1867
atrix (soil/					le ID: L1867-3
evel (low/med	d): LOW				eived: 05/07/94
Solids:	0.	_		2400 1100	02/04/04
			/I. ov wa/ka dw		- 170/1
C	oncentracion	t units (ug)	/L or mg/kg dry	/ weight)	: OG/L_
	CAS No.	Analyte	Concentration	C Q	M
	7440-70-2		71700		<u>P_</u>
	7439-95-4 7439-97-6	Magnesium Mercury	39100 0.20	ਗ਼	P AV
	7440-09-7	Potassium	7640		P_ P_
	7440-23-5	Sodium	19400		P_
		\ <u>-</u>			
				-	
				-	
				-	
				-	·
				_	
lor Before:	COLORLESS	Clarit	y Before: CLEA	R_	Texture:
lor After:	COLORLESS	Clarit	y After: CLEA	R_	Artifacts:

Lab Name: L.E.	S.A.T		Contract: W	ES:	ron		2GWWM4S
Lab Code: LOCK	Ca	se No.: 51	OWES SAS No.	: _		SD	G No.: L1867W
Matrix (soil/w	ater): WATE	R		La	ab Samp	le I	D: L1867-8
Level (low/med	l): LOW_	_		Da	ate Rec	eive	d: 05/07/94
% Solids:	0.	0					
· Co	ncentration	Units (ug	/L or mg/kg dr	y v	weight)	: UG	/L_
	CAS No.	Analyte	Concentration	С	Q	M	
	7429-90-5	Aluminum	66.6		N*	MS	
	7440-36-0 7440-38-2	Arsenic_	10.1			MS MS	
	7440-41-7	Barium Beryllium	495	ľ		MS MS	
	7440-43-9	Cadmium	1.0	UB		MS MS	
	7440-48-4	Cobalt	3.2	B		MS	
	7440-50-8 7439-89-6	Copper	1.8	ÌΙ	+	MS MS	
	7439-92-1	Lead	1.0			MS	
	7439-96-5 7440-02-0	Nickel	11900	-		MS MS	
	7782-49-2	Selenium_	3.0	<u></u>		MS	
	7440-22-4	Thallium	1.0	ם U		MS MS	
	7440-28-0 7440-62-2 7440-66-6	Vanadium_ Zinc		ן ט		MS MS	
	/440-66-6	ZIIIC	19.7	_			
				_			
				-			
				_		_	
				_			
Color Before:	AETTOM	Clarit	y Before: CLEA	AR_		Text	cure:
Color After:	COLORLESS	Clarit	y After: CLEA	LR_		Arti	ifacts:
Comments:							
				_			

CLIENT ID NO.

ab Name: L.A.	.s		Contract: W	ESTON	2GWWM4S
₃b Code: LOC	Ca Ca	se No.: 50	SWES SAS No.	:	SDG No.: L1867W
atrix (soil/v	water): WATE	R		Lab Samp	ole ID: L1867-8
evel (low/med					ceived: 05/07/94
Solids:	0.	_			, ,
			/L or mg/kg dr	y weight)	: UG/L_
	CAS No.	Analyte	Concentration	C Q	м
	7440-70-2		194000	-	P P
	7439-95-4	Magnesium Mercury	76500	₫	AV
	7440-09-7	Potassium	6920 72600		P P
	7440-23-5	Sodium			- -
	-			-	_
				-	
				\ - \	
	<u> </u>	<u> </u>		- -	-
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				-	
	\ <u> </u>	\ 		-	·
				-	-
Color Before:	COLORLESS	Clari	ty Before: CLE	AR_	Texture:
Color After:	COLORLESS	Clari	ty After: CLE	AR_	Artifacts:
Comments:					

Lab Name: L.E.	S.A.T		Contract: W	ESTON	2GWWM5D
Lab Code: LOCK	Ca	se No.: 51	OWES SAS No.	:	SDG No.: L1867W
Matrix (soil/w	ater): WATE	R		Lab Sampl	e ID: L1867-12
Level (low/med	LOW_			Date Rece	eived: 05/07/94
% Solids:	0.	0			
Co	ncentration	Units (ug	/L or mg/kg dr	y weight):	UG/L_
	CAS No.	Analyte	Concentration	c o	M
	7429-90-5 7440-36-0 7440-38-2 7440-39-3 7440-41-7 7440-43-9 7440-47-3 7440-48-4 7440-50-8 7439-96-5 7440-02-0 7782-49-2 7440-22-4 7440-28-0 7440-66-6	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead Manganese Nickel Selenium Silver Thallium Vanadium	1.0 2.0 112 2.1 1.0 33.4 25.4 76.4 6450 7.8	\overline{\pi}	MS MS MS MS MS MS MS MS MS MS MS MS MS M
Color Before:	AETTOM	Clarit	y Before: CLR	AR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLR	AR_	Artifacts:
Comments:					

CLIENT ID NO.

ub Name: L.A.	.s		Contract: W	ESTON	2GWWM5D
ab Code: LOCE	Ca.	se No.: 50	SWES SAS No.	:	SDG No.: L1867W
atrix (soil/v	water): WATE	R		Lab Samp	ple ID: L1867-12
evel (low/med	i): LOW_	_		Date Rec	ceived: 05/07/94
Solids:	0.	0			
Co	oncentration	Units (ug	/L or mg/kg dr	y weight)	: UG/L_
	CAS No.	Analyte	Concentration	C Q	м
	7440-70-2		74600		<u> </u>
	7439-95-4 7439-97-6	Magnesium Mercury_	6990	\ ₁₁	P AV
	7440-09-7	Potassium	5230		P P
	7440-23-5	Sodium	39600	-	P_
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				-	·
				-	
Color Before:	COLORLESS	Clarit	y Before: CLE	AR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLE	AR_	Artifacts:
Comments:					

	TD	NTO
CLIENT	111	IVU

2GWWM5M

Lab Name: L.E.	S.A.T		Contract: 1	weston	_
Lab Code: LOCK	Ca Ca	se No.: 510	WES SAS No.	.:	SDG No.: L18
Matrix (soil/w	water): WATE	er.		Lab Sam	ple ID: L1867-1
Level (low/med	i): LOW			Date Red	ceived: 05/07/9
% Solids:	_	_			
	_		<i>i</i> -		
Co	ncentration	Units (ug/	L or mg/kg di	ry weight;): UG/L_
	CAS No.	Analyte	Concentration	1 C Q	M
	7429-90-5	Aluminum	45.9	5 B N*	~ MS
	7440-36-0	Antimony_	1.0	ם – שוכ	- MS
	7440-38-2	Arsenic_	56.3	3	MS
	7440-39-3		705	5 -	MS
	7440-41-7	Beryllium	1.0	지뭐	MS MS
	7440-47-3			รูเมีย—— —	- MS
	7440-48-4	Cobalt		B B = ===	MS
	7440-50-8	Copper	1.2	2 (B)	MS
	7439-89-6		2220	_ *	MS
	7439-92-1		1.0		MS
	7440-02-0	Manganese Nickel	6.6	음(_둘 /	MS MS
	7782-49-2	Selenium	3.0		- MS
	7440-22-4	Silver -	1.0	ט ע	MS
	7440-28-0	Thallium_	1.0	ט ט כ	MS
	7440-62-2		1.0	([u]	MS
	7440-66-6	Zinc	22.0	'{-{- -	MS
				- -	
				-(-(<u>-</u>
				- -	-
				<u> - </u>	
Color Before:	COLORLESS	Clarit	y Before: CLE	EAR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLE	EAR_	Artifacts:
Comments:					
		FO	RM I - IN		

ab Name: L.A	.s		Contract: W	eston	2GWWM5M
Lab Code: LOCI	K Ca	se No.: 50	SWES SAS No.	:	SDG No.: L1867W
Matrix (soil/v	water): WATE	R		Lab Sam	ple ID: L1867-11
Level (low/med	i): LOW_				ceived: 05/07/94
k Solids:	_	_			,
	_		/L or mg/kg dr	v weight) - TG/I.
	1	T	, 2 02 23, 23 02,	y weight	 _
	CAS No.	Analyte	Concentration	C Q	M
	7440-70-2		39000		P
	7439-95-4 7439-97-6	Magnesium Mercury	34700	₩	P AV
	7440-09-7 7440-23-5		6670 21500		P P
	7440-23-5	5001010	21500	_	- P_
				- -	
				-	
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				_	-
				-	-
					-
				-	-
				_	
				-	-
Color Before:	COLORLESS	Clarit	y Before: CLE	AR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLEA	LR_	Artifacts:
Comments:					

Lab Name: L.E.	S.A.T	_	Contract: W	ESTON	2GWWM5S
					SDG No.: L1867W
Matrix (soil/w					e ID: L1867-10
Level (low/med	_			Date Rece	ived: 05/07/94
% Solids:	0.	0			
Co	ncentration	Units (ug	/L or mg/kg dr	y weight):	UG/L_
	CAS No.	Analyte	Concentration	c o	M
	7429-90-5	Aluminum	104	<u>B</u> - <u>N</u> +	MS
	7440-36-0	Antimony	3.1	B	MS
		Arsenic_	18.0		MS
	7440-39-3 7440-41-7	Barium Berullium	750 1.0	[MS MS
	7440-43-9	Cadmium	1.0		MS
	7440-47-3	Chromium	1.0	B	MS
	7440-48-4	Cobalt	3.2	B	MS∤
		Copper	2.5		MS
	7439-89-6	Iron	11200	 	MS MS
		Lead Manganese	1.0	• :	MS MS
	7440-02-0	Nickel	21.7	- 	MS
	7782-49-2			 	MS
		Silver	3.0	ים	MS (
	7440-28-0		1.0	U 1	MS
	7440-62-2		2.1 13.1		MS MS
	7440-66-6	Zinc			MS
				- ·	- }
					_
Color Before:	AETTOM	Clarit	y Before: CLE	AR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLE	AR_	Artifacts:
Comments:					

CLIENT ID NO.

		INOROMITE !	MINITODO DATA		
ab Name: L.A.	.s.		Contract: W	eston	2GWWM5S
					SDG No.: L1867W
atrix (soil/v					le ID: L1867-10_
evel (low/med	i): Low			Date Rece	 eived: 05/07/94
Solids:		_			
	_		/L or mg/kg dr	y weight):	UG/L_
	CAS No.	Analyte	Concentration	c o	M
	7440-70-2		173000	_	P
	7439-95-4	Magnesium	65300	-	p
	7439-97-6	Mercury_ Potassium	0.20	\vartheta	AV P
		Sodium	20200		P
					_
				-	
					-
					_
					_
				-	_
				-	-
lor Before:	COLORLESS	Clarit	y Before: CLE	AR_	Texture:
lor After:	COLORLESS	Clarit	y After: CLE	AR_	Artifacts:
mments:					

-	Lab Name: L.E.	S.A.T		Contract: W	ESTON	2GWWM6D
T	Lab Code: LOCK	Ca	se No.: 510	OWES SAS No.	:	SDG No.: L1867W
	Matrix (soil/w	ater): WATE	R		Lab Sampl	e ID: L1867-14
	Level (low/med): LOW_	_		Date Rece	ived: 05/07/94
	% Solids:	0.0	0			
	Co	ncentration	Units (ug/	/L or mg/kg dry	y weight):	UG/L_
		CAS No.	Analyte	Concentration	C Q	M
		7429-90-5 7440-36-0		81.4		MS MS
		7440-38-2 7440-39-3 7440-41-7 7440-43-9	Arsenic Barium Beryllium	2.0 56.0 1.0	U	MS MS MS MS
		7440-47-3 7440-48-4 7440-50-8	Chromium_	2.4 18.3	B III	MS MS MS MS
			Lead Manganese Nickel	1.3 5400 12.2	B	MS MS MS MS
		7440-22-4 7440-28-0 7440-62-2 7440-66-6	SilverThallium	1.0 1.0 6.4 59.0	U II	MS MS MS
	Color Before:	COLORLESS	Clarit	y Before: CLEA	AR_ :	Texture:
Į	Color After:	COLORLESS	Clarit	y After: CLEA	AR_ 2	Artifacts:
	Comments:					
1						

CLIENT ID NO.

ab Name: L.A.S Contract: WESTON	2GWWM6D
ab Code: LOCK Case No.: 505WES SAS No.:	SDG No.: L1867W
atrix (soil/water): WATER Lab Sample	ID: L1867-14
evel (low/med): LOW Date Recei	ved: 05/07/94
Solids:0.0	
Concentration Units (ug/L or mg/kg dry weight):	UG/L_
CAS No. Analyte Concentration C Q M	<u> </u>
7439-95-4 Magnesium 17000 T A A A A A A A A A A A A A A A A A	
Color Before: COLORLESS Clarity Before: CLEAR_ T	exture:
Color After: COLORLESS Clarity After: CLEAR_ A	rtifacts:
Comments:	

CLIENT	ID	NO
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	Lab Name: L.E.	S.A.T		Contract: W	ES1	ON		2GWWM6M
ı	Lab Code: LOCK	Ca	se No.: 51	OWES SAS No.	: _		SDG	No.: L1867
	Matrix (soil/w	ater): WATE	R		La	ub Sampi	le ID:	L1867-13_
0	Level (low/med): LOW_	_					05/07/94
	% Solids:	0.	0					
	Co	ncentration	Units (ug	/L or mg/kg dr	у w	eight)	: UG/L	_
		CAS No.	Analyte	Concentration	c	Q	M	
ļ		7429-90-5 7440-36-0	Aluminum	102			MS MS	
		7440-38-2	Arsenic	38.2	1_{-1}		MS	
		7440-39-3 7440-41-7		410	Ħ		MS MS	
		7440-43-9		1:0			MS	
		7440-47-3	Chromium_	2.2	B		MS	•
		7440-48-4		3.1	B		MS	
		7440-50-8		1.5	B		MS	
		7439-89-6	Iron	3570	F F	*	MS	
		7439-92-1 7439-96-5	Lead	1.0	וטן		MS MS	
			Nickel	5.5	TE		MS	
		7782-49-2			שׁ		MS	
		7440-22-4		1.0	ן ש		MS	
		7440-28-0	Thallium_	1.0	ס		MS	
		7440-62-2		1.0	ן ש ן		MS	
		7440-66-6	Zinc	16.8	$ \mathbf{B} $		MS	
					[-]		 [
					∤ -			
					-			
					<u> -</u> :		_	
					- :		_	
	Color Before:	COLORLESS	Clarit	y Before: CLE	AR_		Textu	re:
	Color After:	COLORLESS	Clarit	y After: CLE	AR_		Artifa	acts:
	Comments:							
					_			

CLIENT ID NO.

ib Name: L.A.	s		Contract: W	eston	2GWWM6M
ab Code: LOCK	Ca	se No.: 50	SWES SAS No.	•	SDG No.: L1867W
atrix (soil/w	ater): WATE	R		Lab Samp	le ID: L1867-13
evel (low/med	l): LOW			Date Rece	eived: 05/07/94
Solids:	_	_			, ,
			/L or mg/kg dry	y weight):	UG/L_
	CAS No.	Analyte	Concentration	C Q	м
	7440-70-2 7439-95-4 7439-97-6 7440-09-7 7440-23-5	Calcium Magnesium Mercury Potassium Sodium	25500 16000 0.20 3620 25200		P
Color Before:	COLORLESS	Clarit	y Before: CLE	AR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLE	LR_	Artifacts:
Comments:					

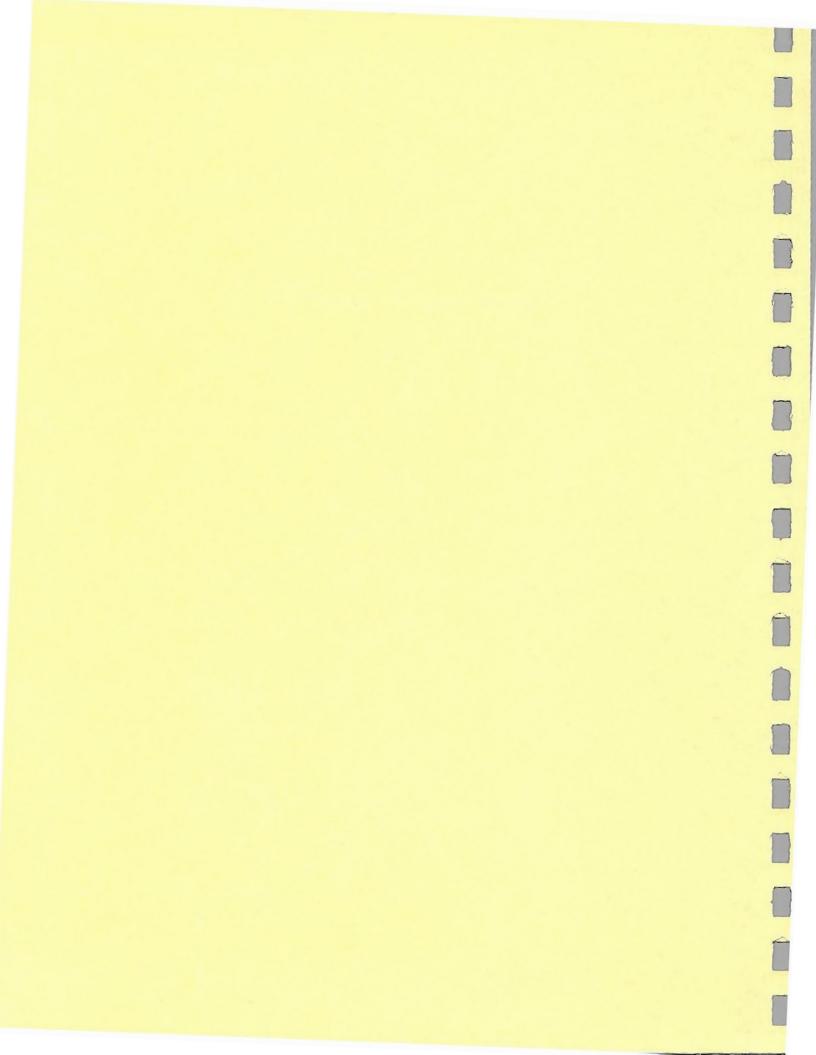
CLIENT ID NO	CL	IENT	ID	NO
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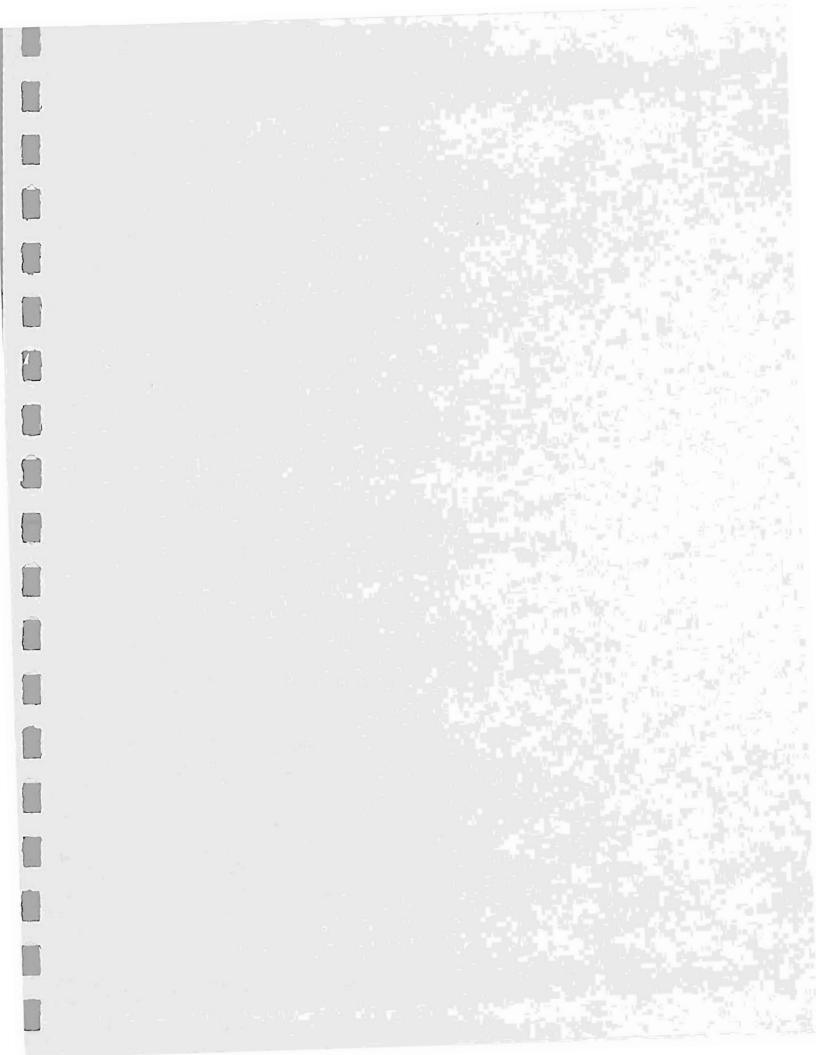
	Lab Name: L.E.	S.A.T.		Contract: W	ESTON	2GWWM6S
1						SDG No.: L1867W
	Matrix (soil/w					e ID: L1867-16
						_
	Level (low/med): LOW_	_		Date Rece	ived: 05/07/94
	% Solids:	0.	0			
	Co	ncentration	Units (ug	/L or mg/kg dry	y weight):	UG/L_
		CAS No.	Analyte	Concentration	c q	<u></u>
					}_ ~	
		7429-90-5 7440-36-0	Aluminum_	34.2	B	MŠ MS
		7440-38-2	Arsenic	11.4		MS
		7440-39-3	Barium	155		MS
		7440-41-7 7440-43-9		1.0	 	MS MS
		7440-47-3	Chromium	1.0	B j	MS .
		7440-48-4 7440-50-8	Cobalt	2.0	B 1	MS
		7440-50-8	Copper	1.9	B	MS
		7439-89-6 7439-92-1	Lead	3210 1.0	/ _{₹₹} * ;	MS MS
			Manganese	2340		MS
		7440-02-0	Nickel	6.1	$ \overline{\mathtt{B}} $	MS
			Selenium_	3.0	וןוו	MS
		7440-22-4		1.0	<u> </u>	MS
		7440-28-0 7440-62-2	Vanadium_	1.0		MS MS
		7440-66-6	Zinc	22.6		MS
					-]
					- -	- -
					-	- -
	Color Before:	COLORLESS	Clarit	y Before: CLEA	AR_	Texture:
	Color After:	COLORLESS	Clarit	y After: CLEA	AR_ 1	Artifacts:
	Comments:					

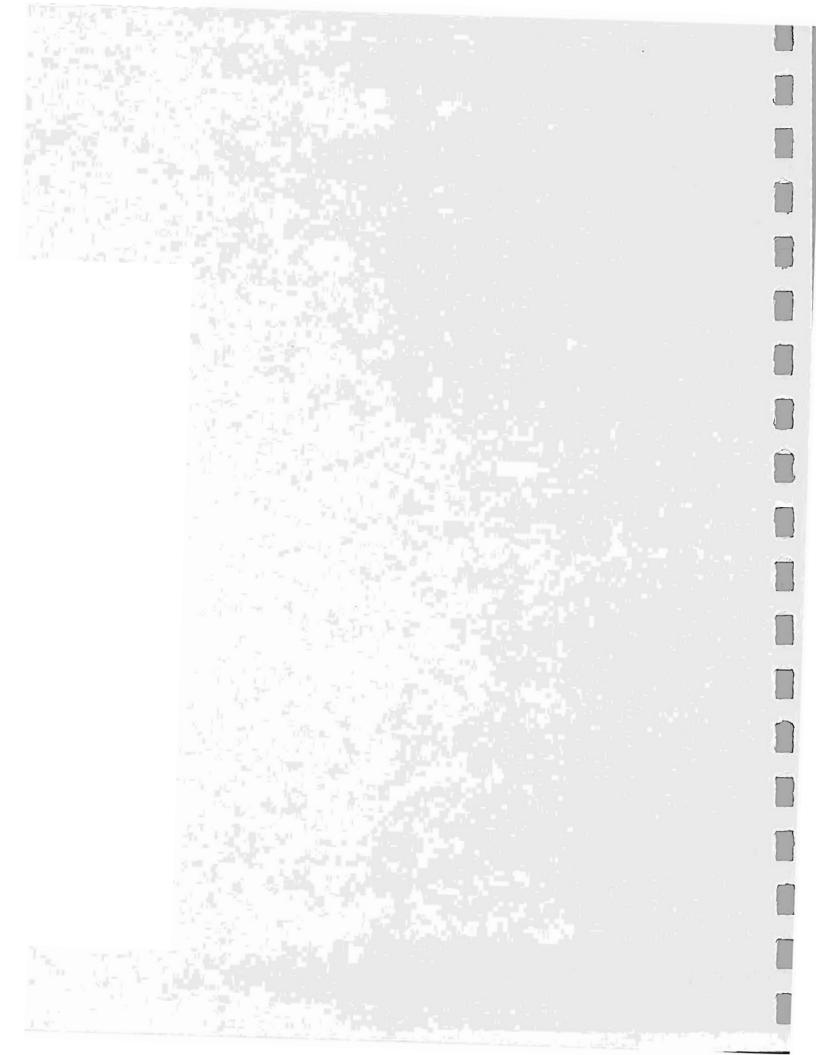
CLIENT ID NO.

ab Name: L.A	.S		Contract: W	ESTON	2GWWM6S
					SDG No.: L1867W
atrix (soil/	water): WATE	R		Lab Sampl	e ID: L1867-16
evel (low/med	d): LOW_	_			eived: 05/07/94
Solids:	_0.	0			
Co	oncentration	Units (ug	/L or mg/kg dr	y weight):	UG/L_
	CAS No.	Analyte	Concentration	C Q	м
	7440-70-2 7439-95-4 7439-97-6 7440-09-7 7440-23-5	Calcium Magnesium Mercury Potassium Sodium	0.20	<u></u>	P
Color Before:	COLORLESS	Clarit	y Before: CLE	AR_	Texture:
Color After:	COLORLESS	Clarit	y After: CLE	AR_	Artifacts:
Comments:					









ROY F. WESTON, INC. GLOSSARY OF TERMS - INORGANIC REPORTS

DATA QUALIFIERS

- U Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * Indicates that the original sample result is greater than 4x the spike amount added. The USEPA-CLP has determined that spike results on samples where this occurs may be unreliable and therefore, the control limits are not applicable.

ABBREVIATIONS

MB - Method or preparation blank.

MS - Matrix Spike.

MSD - Matrix Spike Duplicate.

REP - Sample Replicate.

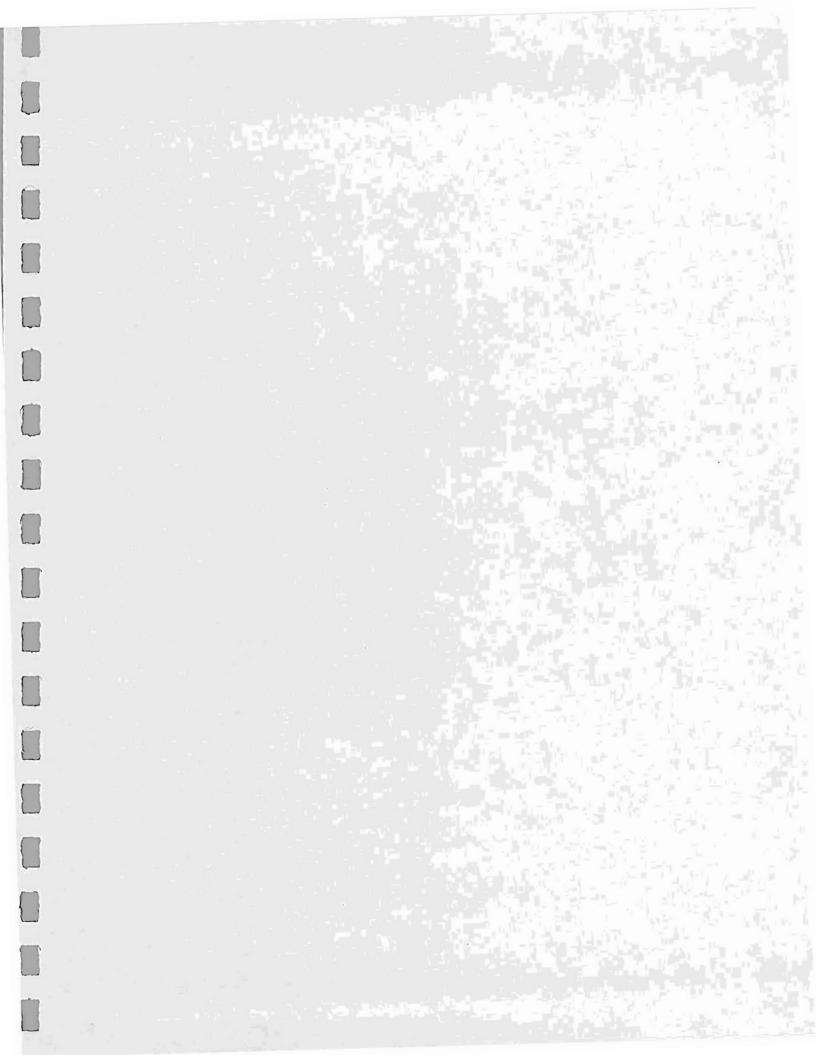
LC - Indicates a method LCS or Blank Spike.

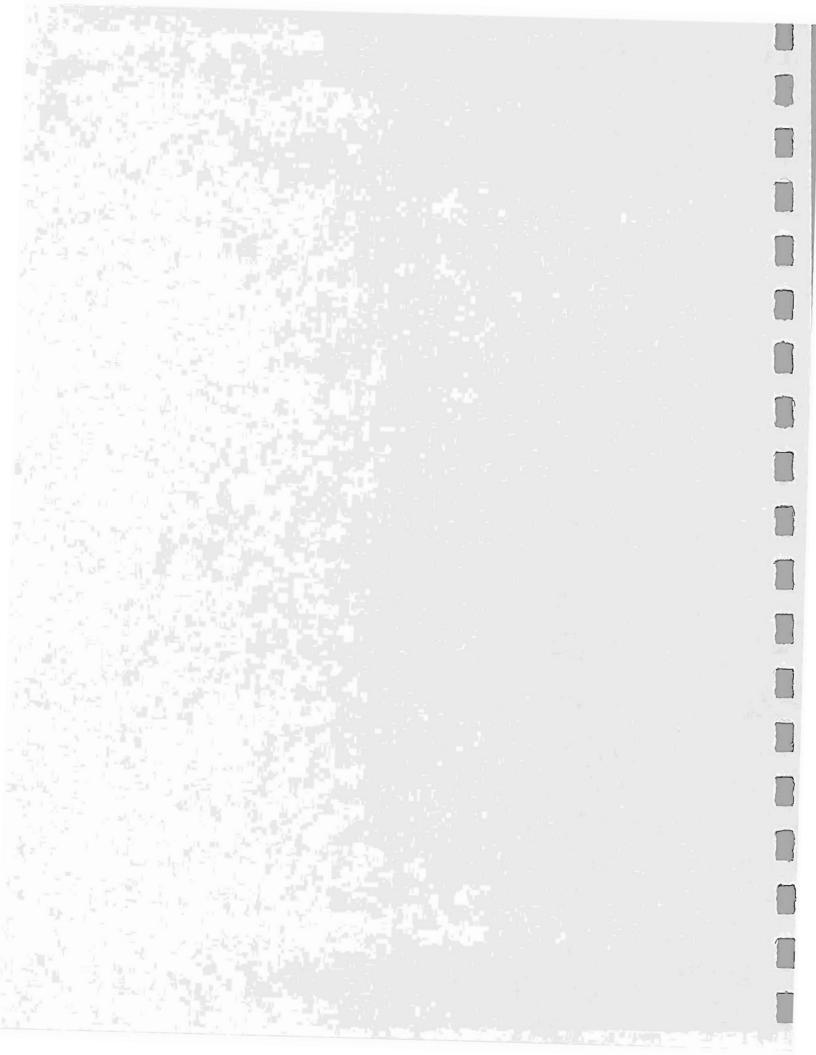
NC - Not calculable, result below the detection limit.

A suffix of -R or -S following these codes indicates a replicate or spike analysis respectively.

BETON

For solid samples, all results are reported on a dry weight basis with the exception of Extractable Organic Halides, which are reported on a wet weight basis.







ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

REVISION

Client: TCB/EAL

W.O. #: 10535-001-001-0070-00

RFW#: 9405L449

Date Received: 05-04-94

INORGANIC

This report revised to correct date received on the labehron and chain of custody.

- 1. All sample holding times as required by the method were met.
- 2. All preparation blank results were below the required detection limits.
- 3. All laboratory control standards (blank spikes) were within the control limits of 80-120%. All %RPD were within the 20% guidance limit.
- 4. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.
- 5. Matrix spike recoveries are summarized on the Inorganic Accuracy Report contained within this document. All recoveries were within the 75-125% guidance limits. All %RPD were within the 20% guidance limit.
- 6. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.
- 7. The analytical methods applied by the laboratory for analyses herein, are derived from the USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020) and Standard Methods for the Examination of Water and Wastewater 16 ed.

b) (4)

Laboratory Manager

Lionville Analytical Laboratory

6.3 94 Date

pas/i05-449r

INORGANIC DATA SUMMARY REPORT 05/20/94

CLIENT: TCB/EAL WESTON BATCE #: 94051449

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	PACTOR
			P			
-001	2-GW-WM-2M	Cyanide, Total	\$.0 u	OG/L	5.0	1.0
		Total Dissolved Solids	509	MG/L	5.0	1.0
-002	2 -GW-WM-2D	Cyanide, Total	5.0 u	UG/L	5.0	1.0
		Total Dissolved Solids	134	MG/L	5.0	1.0
-003	2-GW-WM-4M	Cyanide, Total	5.0 u	OG/L	5.0	1.0
		Total Dissolved Solids	442	MG/L	5.0	1.0
-005	2-GW-WM-35	Cyanide, Total	5.0 u	UG/L	5.0	1.0
		Total Dissolved Solids	872	M3/L	5.0	1.0
-006	2-GN-WH-3H	Cyanide, Total	5.0 u	UG/L	5.0	1.0
		Total Dissolved Solids	644	MG/L	5.0	1.0
-007	2-GW-WM-3D	Cyanide, Total	10.0 u	DG/L	10.0	1.0
		Total Dissolved Solids	313	MG/L	5.0	1.0
-009	2-GW-WM-45	Cyanide, Total	5.0 u	UG/L	5.0	1.0
		Total Dissolved Solids	1080	MG/L	5.0	1.0
-010	2-GH-WM-4D	Cyanide, Total	5.0 u	DG/L	5.0	1.0
		Total Dissolved Solids	189	MG/L	5.0	1.0

INORGANIC METHOD BLANK DATA SUMMARY PAGE 05/20/94

CLIENT: TCB/EAL WESTON BATCH #: 94051449

					REPORTING	PITOLION
Sample	SITE ID	ANALYTE	RESULT	CEVITS	LIMIT	PACTOR

BLANKI	94LC121-MB1	Cyanide, Total	5. 0 .	t CG/L	5.0	1.0
BLANKLO	94LSS082-MB1	Total Dissolved Solids	5.0 u	MG/L	5.0	1.0
BLANVI	941.C122-MB1	Ovanide, Total	5.0 x	105./1.	5.0	1.0

INORGANIC ACCURACY REPORT 05/20/94

CLIENT: TCB/EAL WESTON BATCH #: 9405L449

			SPIKED	INITIAL	SPIXED		DILUTION
SAMPLE	SITE ID	analyte	SAMPLE	result	AMOUNT	*RECOV	PACTOR (SPX)

-007	2-GH-WM-3D	Cyanide, Total	89.1	10.0 u	700	89.1	1.0
		Cyanide, Total MSD	94.4	10.0 u	100	94.4	1.0
-010	2-GW-WM-4D	Cyanide, Total	48.0	5.0 u	50.0	96.1	1.0
		Cyanide, Total MSD	49.7	5.0 u	50.0	99.3	1.0
BLANKIO	94LSS082-MB1	Total Dissolved Solids	98.0	5.0 u	100	98.0	1.0
		Total Dissolved Solids	97.0	5.0 u	100	97.0	1.0

INORGANIC DUPLICATE SPIKE RSPORT 05/20/94

CLIENT: TCS/EAL WESTON BATCH #: 9405L449

			SPIKE#1 SPIKE#2		
SAMPLE	SITE ID	ANALYTE	*RECOV	TRECOV	TRPD
-007	2 -GW-WM-3D	Cyanide, Total	89.1	94.4	5.8
-010	2-GW-WM-4D	Cyanide, Total	96.1	99.3	3.3
LCS2	94LC121-LC2	Cyanide, Total LCS	91.8	94.1	2.4
BLANK10	941\$S082-MB1	Total Dissolved Solids	98.0	97.0	1.0
LCS2	94LC122-LC2	Cyanide, Total LCS	97.2	98.9	1,7

INORGANIC PRECISION REPORT 05/20/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L449

			INITIAL			DILUTION
SAMPLE	SITE ID	analyte	RESULT	REPLICATE	*RPD	PACTOR (REP)
		# FEW TOWN TOWN FOR THE PROPERTY OF THE PROPER				
-007REP	2-GW-WM-3D	Cyanide, Total	10.0 u	10.0 u	NC.	1.0
		Total Dissolved Solids	313	325	3.8	1.0
-010REP	2-GW-WM-4D	Cyanide, Total	5.0 u	5.0 u	NC	1.0

ROY F. WESTON INC.

INORGANIC LABORATORY CONTROL STANDARDS REPORT 05/20/94

			SPIKED	SPIKED		
SAMPLE	SITE ID	ANALYTE	sample	THUDOMA	STINU	*RECOV
LCS1	94LC121-LC1	Cyanide, Total LCS	91.9	100	OG/L	91.8
LCS2	94LC121-LC2	Cyanide, Total LCS	94.1	100	OG/L	94.1
LCS1	94LC122-LC1	Cyanide, Total LCS	97.2	100	OG/L	97.2
LCS2	94LC122-LC2	Cyanide, Total LCS	98.9	100	UG/L	98.9

Roy F. Weston, Inc. - Lionville Laboratory INORGANIC ANALYTICAL DATA PACKAGE FOR TCB/EAL

DATE RECEIVED: 05/03/94 RFW LOT # :9405L449 CLIENT ID /ANALYSIS RFW # MIX PREP # COLLECTION EXTR/PREP ANALYSIS 2-GW-WM-2M TOTAL CYANIDE 001 W 94LC121 05/02/94 05/12/94 05/12/94 TOTAL DISSOLVED SOLI 001 W 94LS5082 05/02/94 05/05/94 05/06/94 2-GW-WM-2D TOTAL CYANIDE W 94LC121 05/02/94 05/12/94 05/12/94 002 W 94LSS082 05/02/94 TOTAL DISSOLVED SOLI 002 05/05/94 05/06/94 2-GW-WM-4M TOTAL CYANIDE 003 W 94LC121 05/03/94 05/12/94 05/12/94 TOTAL DISSOLVED SOLI 003 W 94LSS082 05/03/94 05/05/94 05/06/94 2-GW-WM-35 TOTAL CYANIDE W 94LC121 05/02/94 05/12/94 05/12/94 005 W 94LSS082 05/02/94 05/05/94 05/06/94 TOTAL DISSOLVED SOLI 005 2-GW-WM-3M TOTAL CYANIDE 05/12/94 05/12/94 006 W 94LC121 05/02/94 TOTAL DISSOLVED SOLI 006 W 94LSS082 05/02/94 05/05/94 05/06/94 2-GW-WM-3D W 94LC122 05/02/94 05/12/94 05/13/94 TOTAL CYANIDE 007 TOTAL CYANIDE 05/02/94 05/12/94 05/13/94 007 REP W 94LC122 05/12/94 05/13/94 TOTAL CYANIDE 007 MS W 94LC122 05/02/94 TOTAL CYANIDE 007 MSD W 94LC122 05/02/94 05/12/94 05/13/94 W 94LSS082 05/02/94 05/05/94 05/06/94 TOTAL DISSOLVED SOLI 007 W 94LSS082 05/02/94 05/05/94 05/06/94 TOTAL DISSOLVED SOLI 007 REP 2-GW-WM-45

W 94LC121

TOTAL CYANIDE

009

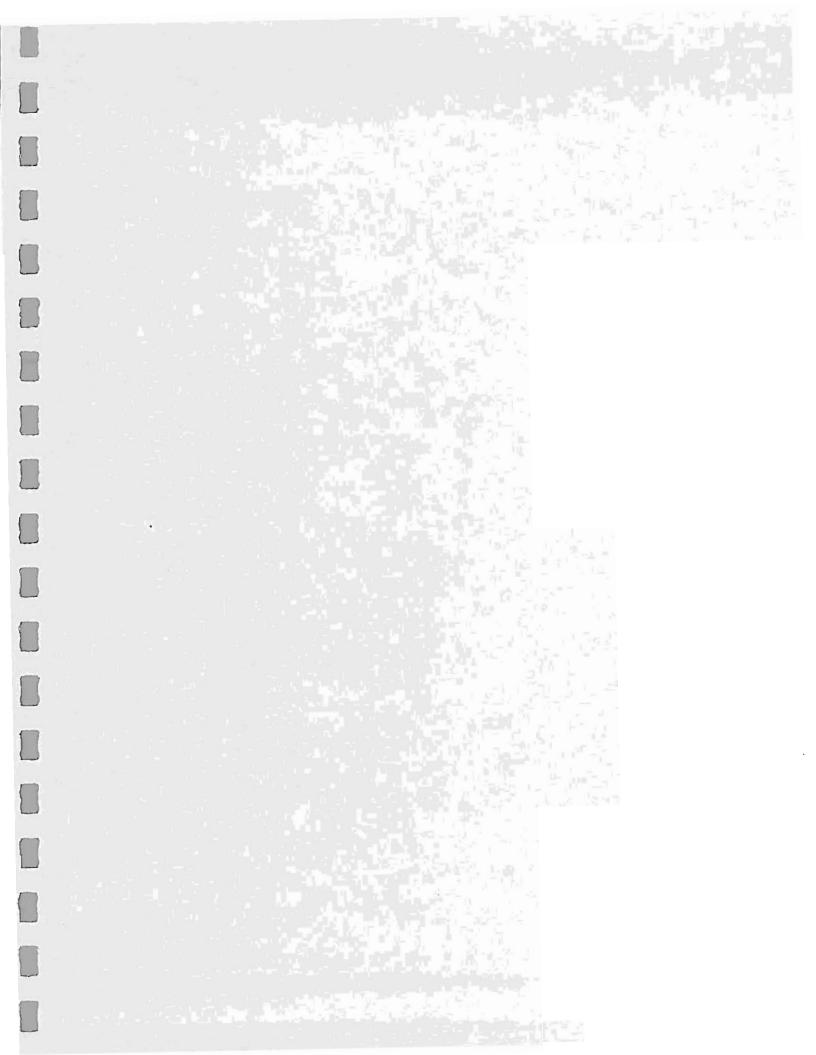
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05/03/94

05/12/94

Roy F. Weston, Inc. - Lionville Laboratory INORGANIC ANALYTICAL DATA PACKAGE FOR TCB/EAL

DATE RECEIVE	D: 05/03	/94				RFW LOT # :9405L449			
CLIENT ID /A	NALYSIS	RFW	#	мтх	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	
TOTAL DISSOL	VED SOLI	009		W	94LSS082	05/03/94	05/05/94	05/06/94	
2-GW-WM-4D									
TOTAL CYANID	E	010		W	94LC121	05/03/94	05/12/94	05/12/94	
TOTAL CYANID	E	010	REP	W	94LC121	05/03/94	05/12/94	05/12/94	
TOTAL CYANID	E	010	MS	W	94LC121	05/03/9 4	05/12/94	05/12/94	
TOTAL CYANID	E	010	MSD	W	94LC121	05/03/94	05/12/94	05/12/94	
TOTAL DISSOL	VED SOLI	010		W	94LSS082	05/03/94	05/05/94	05/06/94	
LAB QC:									
TOTAL CYANID	E	LC1	L	W	94LC121	N/A	05/12/94	05/12/94	
TOTAL CYANID	E	LC2	L	W	94LC121	N/A	05/12/94	05/12/94	
TOTAL CYANID	E	MB1		W	94LC121	n/A	05/12/94	05/12/94	
TOTAL DISSOL	VED SOLI	MB1		W	94LS\$082	N/A	05/05/94	05/06/94	
TOTAL DISSOL	VED SOLI	MB1	BS	W	94LSS082	N/A	05/05/94	05/06/94	
TOTAL DISSOL	VED SOLI	MB1	BSD	W	94LSS082	N/A	05/05/94	05/06/94	
TOTAL CYANID	E	LC1	L	W	94LC122	N/A	05/12/94	05/13/94	
TOTAL CYANID	E	LC2	L	W	94LC122	N/A	05/12/94	05/13/94	
TOTAL CYANID	E	MB1		W	94LC122	N/A	05/12/94	05/13/94	







ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL RFW#: 9405L472 **W.O.** #: 10535-001-001-0070-00

Date Received: 05-04-94

INORGANIC

The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

- 1. All sample holding times as required by the method were met.
- 2. All preparation blank results were below the required detection limits.
- 3. All laboratory control standards (blank spikes) were within the control limits of 80-120%. All %RPD were within the 20% guidance limit.
- 4. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.
- 5. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.
- 6. The analytical methods applied by the laboratory for analyses herein, are derived from the USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020) and Standard Methods for the Examination of Water and Wastewater 16 ed.

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Laboratory Manager
Lionville Analytical Laboratory

Date

pas/i05-472

INORGANICS DATA SUMMARY REPORT 05/25/94

CLIENT: TCB/EAL WESTON BATCH #: 9405L472

					REPORTING	DILUTION
SANPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
	201400			*****		******
-001	2-GN-WM-55	Cyanide, Total	5.0 u	UG/L	5.0	1.0
		Total Dissolved Solids	1000	MG/L	5.0	1.0
-002	2-GH-WM-5M	Cyanide, Total	5.0 u	DG/L	5.0	1.0
		Total Dissolved Solids	280	MG/L	5.0	1.0
-003	2-GH-MM-5D	Cyanide, Total	5.0 u	03/L	5.0	1.0
		Total Dissolved Solids	220	MG/L	5.0	1.0
-004	2 - GM - WM - 6M	Cyanide, Total	5.0 u	OG/L	5.0	1.0
		Total Dissolved Solids	210	MG/L	5.0	1.0
-005	2-GN-WM-6D	Cyanide, Total	5.0 u	UG/L	5.0	1.0
		Total Dissolved Solids	260	M3/L	5.0	1.0
-006	2-PB-WM-\$D	Cyanide, Total	5.0 u	DG/L	5.0	1.0
		Total Dissolved Solids	5.0	M3/L	5.0	1.0

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/25/94

CLIENT: TCB/EAL WESTON BATCH #: 94051A72

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	PACTOR
		PO ±4==========	****	***		20122
BLANK1	94LC121-MB1	Cyanide, Total	5.0 u	UG/L	5.0	1.0
BLANK10	94LSS083-MB1	Total Dissolved Solids	5.0 u	MG/L	5.0	1.0
BLANKI	94LC122-M81	Cyanide, Total	5.0 u	DG/L	5.0	1.0

INORGANICS ACCURACY REPORT 05/25/94

CLIENT: TCB/EAL WESTON BATCH #: 9405L472

			SPIRED	INITIAL	SPIKED		DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT	*RECOV	FACTOR (SPK)
	-4055404480544404440		***	*****	C8##80	#54447#	-2074-0
BLANKI 0	94LS5083-MB1	Total Dissolved Solids	99	5.0 u	100	99.0	1.0
		Total Dissolved Solids	96	5.0 u	100	96.0	1.0

INORGANICS DUPLICATE SPIKE REPORT 05/25/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L472

			SETTEN	C SLINEA.	4
Sample	SITE ID	ANALYTE	*RECOV	trecov	*DIPP
	***************				*****
LCS2	94LC121-LC2	Cyanide, Total LCS	91.8	94.1	2.4
BLANK10	941SS083-MB1	Total Dissolved Solids	99.0	96.0	3.1
LCS2	94LC122-LC2	Cyanide, Total LCS	97.2	90.9	1.7

INORGANICS PRECISION REPORT 05/25/94

CLIENT: TCB/EAL WESTON BATCH #: 9405L472

				INTITAL			DITOILION
SAM	PLE	SITE ID	analyte	result	REPLICATE	RPD	FACTOR (REP)
		*404=*********		E===0044	*****	#8C0F==	025==£04==
-00!	SREP	2-GW-WM-6D	Total Dissolved Solids	260	270	2.6	1.0

ROY F. WESTON INC.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/25/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L472

MORE ORDE	R: 10555-001 001 00.		SPIKED	SPIKED		
SAMPLE	SITE ID	ANALYTE	Sample	TYUOMA	UNITS	*RECOV
				*****	==== <i>=</i>	007544
rcsı	94LC121-LC1	Cyanide, Total LCS	92	100	OG/L	91.0
LCS2	94LC121-LC2	Cyanide, Total LCS	94	100	OG/L	94.1
LCS1	94LC122-LC1	Cyanide, Total LCS	97	100	UG/L	97.2
LCS2	941C122-LC2	Cyanide, Total LCS	99	100	UG/L	98.9

Roy F. Weston, Inc. - Lionville Laboratory INORGANIC ANALYTICAL DATA PACKAGE FOR TCB/EAL

DATE RECEIVED: 05/04	1/94			1	RFW LOT # :9	405L472
CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-5S						
TOTAL CYANIDE	001	W	94LC121	05/04/94	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	001	W	94LSS083	05/04/94	05/06/94	05/09/94
2-GW-WM-5M						
TOTAL CYANIDE	002	W	94LC121	05/04/94	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	002	W	94LSS083	05/04/94	05/06/94	05/09/94
2-GW-WM-5D						
TOTAL CYANIDE	003	W	94LC122	05/04/94	05/12/94	05/13/94
TOTAL DISSOLVED SOLI	003	W	94LSS083	05/04/94	05/06/94	05/09/94
2-GW-WM-6M						
TOTAL CYANIDE	004	W	94LC122	05/03/94	05/12/94	05/13/94
TOTAL DISSOLVED SOLI	004	W	94LSS083	05/03/94	05/06/94	05/09/94
2-GW-WM-6D						
TOTAL CYANIDE	005	W	94LC122	05/03/94	05/12/94	05/13/94
TOTAL DISSOLVED SOLI	005	W	94LSS083	05/03/94	05/06/94	05/09/94
TOTAL DISSOLVED SOLI	005 REP	W	94LSS083	05/03/94	05/06/94	05/09/94
2-FB-WM-5D						
TOTAL CYANIDE	006	W	94LC122	05/04/94	05/12/94	05/13/94
TOTAL DISSOLVED SOLI	006	W	94LSS083	05/04/94	05/06/94	05/09/94
LAB QC:						
TOTAL CYANIDE	LC1 L	W	94LC121	N/A	05/12/94	05/12/94
TOTAL CYANIDE	LC2 L	W	94LC121	N/A	05/12/94	05/12/94
TOTAL CYANIDE	MB1	พ พ	94LC121 94LSS083	n/A N/A	05/12/94 05/06/94	05/12/94 05/09/94
TOTAL DISSOLVED SOLI	MB1	W	741102083	N/A	03/00/34	05/03/34

Roy F. Weston, Inc. - Lionville Laboratory INORGANIC ANALYTICAL DATA PACKAGE FOR TCB/EAL

DATE RECEIVED: 05/04/94

RFW LOT # :9405L472

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
		- —				
TOTAL DISSOLVED SOLI	MB1 BS	W	94LSS083	N/A	05/06/94	05/09/94
TOTAL DISSOLVED SOLI	MB1 BSD	W	94LSS083	N/A	05/06/94	05/09/94
TOTAL CYANIDE	LC1 L	W	94LC122	N/A	05/12/94	05/13/94
TOTAL CYANIDE	LC2 L	W	94LC122	N/A	05/12/94	05/13/94
TOTAL CYANIDE	MB1	W	94LC122	N/A	05/12/94	05/13/94

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ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: TCB/EAL W.O. #: 10535-001-0070-00

INORGANIC

The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

- 1. All sample holding times as required by the method were met.
- 2. All preparation blank results were below the required detection limits.
- 3. All laboratory control standards (blank spikes) were within the control limits of 80-120%. All %RPD were within the 20% guidance limit.
- 4. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.
- 5. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.
- 6. The analytical methods applied by the laboratory for analyses herein, are derived from the USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020) and Standard Methods for the Examination of Water and Wastewater 16 ed.

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Laboratory Manager
Lionville Analytical Laboratory

Date

pas/i05-493

INORGANIC DATA SUMMARY REPORT 05/26/94

CLIENT: TCB/EAL WESTON BATCH #: 9405L493

SAMPLE	SITE ID	ANALYTE	result	UNITS	reporting Limit	DILUTION FACTOR
		AGUMANU&		*****		
-001	2-GW-WM-65	Cyanide, Total	10.0 u	UG/L	10.0	1.0
		Total Dissolved Solids	349	MG/L	5.0	1.0
-002	2-GN-9M-2S	Cyanide, Total	5.0 u	DG/L	5.0	1.0
		Total Dissolved Solids	1230	MG/L	5.0	1.0
-003	2-GW-WM-1S	Cyanide, Total	5.0 u	OG/L	5.0	1.0
		Total Dissolved Solids	115	MG/L	5.0	1.0
-005	2-GW-WM-1M	Cyanide, Total	5.0 u	DG/L	5.0	1.0
		Total Dissolved Solids	365	MG/L	5.0	1.0
-006	2-DP-WM-1M	Cyanide, Total	5.0 u	UG/L	5.0	1.0
		Total Dissolved Solids	408	MG/L	5.0	1.0
-007	2-GW-HM-1D	Cyanide, Total	5.0 u	UG/L	5.0	1.0
		Total Dissolved Solids	176	MG/L	5.0	1.0

INORGANIC METHOD BLANK DATA SUMMORY PAGE 05/26/94

CLIENT: TCB/RAL WESTON BATCH #: 9405L493

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	PACTOR
~=====	# = # = # Q & # # = # = # = # = # = # = # = # = # =	*******				
BLANKI	94LC125-MB1	Cyanide, Total	10.0 u	UG/L	10.0	1.0
BLANKIO	94LSS084-MB1	Total Dissolved Solids	5.0 u	MG/L	5.0	1.0
BLANKI	94LC128-MB1	Cyanide, Total	5.0 u	DG/L	5.0	1.0

INORGANIC ACCURACY REPORT 05/26/94

CLIENT: TCB/EAL

WESTON BATCH #: 94051493

			SPIKED	INITIAL	SPIKED		DILUTION
Sample	SITE ID	ANALYTE	SAMPLE	result	AMOUNT	*R8COV	PACTOR (SPK)
	**************	*******	F444444				*******
BLANNCLO	94LS5084-MB1	Total Dissolved Solids	99.0	5.0 u	100	99.0	1.0
		Total Dissolved Solids	100	5.0 u	100	100	1.0

INORGANIC DUPLICATE SPIKE REPORT 05/26/94

CLIENT: TCB/EAL WESTON BATCH #: 94051493

			SPIKE#1 SPIKE#2				
SAMPLE	SITE ID	ANALYTE	*RECOV	*RECOV	*RPD		

LCS2	94LC125-LC2	Cyanide, Total LCS	95.1	99.8	4.9		
BLANK10	94L5S084-MB1	Total Dissolved Solids	99.0	100	1.0		
LCS2	94LC128-LC2	Cyanide, Total LCS	89.4	95.9	7.1		

INORGANIC PRECISION REPORT 05/26/94

CLIENT: TCB/EAL WESTON BATCH #: 9405L493

			INITIAL			DITOLION
Sample	SITE ID	ANALYTE	RESULT	REPLICATE	*RPD	PACTOR (RBP)
	*******			**		
-007REP	2-GW-MM-1D	Total Dissolved Solids	176	176	0.00	1.0

ROY F. WESTON INC.

INORGANIC LABORATORY CONTROL STANDARDS REPORT 05/26/94

			SPIKED	SPIKED		
Sample	SITE ID	ANALYTE	Sample	AMOUNT	UNITS	*RECOV
	40000000000000000000000000000000000000			04=4 = =	*****	
LCS1	94LC125-LC1	Cyanide, Total LCS	95.1	100	UG/L	95.1
LCS2	941C125-LC2	Cyanide, Total LCS	99.8	100	UG/L	99.8
LCS1	94LC128-LC1	Cyanide, Total LCS	89.4	100	DG/L	89.4
LCS2	94LC128-LC2	Cyanide, Total LCS	95.9	100	DG/L	95.9

Roy F. Weston, Inc. - Lionville Laboratory INORGANIC ANALYTICAL DATA PACKAGE FOR TCB/EAL

DATE RECEIVED: 05/06	/94			1	RFW LOT # :9405L493			
CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS		
2-GW-WM-6S								
TOTAL CYANIDE TOTAL DISSOLVED SOLI	001 001	W	94LC125 94LS5084	05/04/94 05/04/94	05/16/94 05/09/94	05/16/94 05/10/94		
	001	п	34035084	03/04/34	03/03/34	03/10/94		
2-GW-WM-2S								
TOTAL CYANIDE	002	W	94LC128	05/05/94	05/17/94	05/17/94		
TOTAL DISSOLVED SOLI	002	W	94LSS084	05/05/94	05/09/94	05/10/94		
2-GW-WM-1S								
TOTAL CYANIDE	003	W	94LC128	05/05/94	05/17/94	05/17/94		
TOTAL DISSOLVED SOLI	003	W	94LSS084	05/05/94	05/09/94	05/10/94		
2-GW-WM-1M								
TOTAL CYANIDE	005	W	94LC128	05/05/94	05/17/94	05/17/94		
TOTAL DISSOLVED SOLI	005	W	94LSS084	05/05/94	05/09/94	05/10/94		
2-DP-WM-1M								
TOTAL CYANIDE	006	W	94LC128	05/05/94	05/17/94	05/17/94		
TOTAL DISSOLVED SOLI	006	W	94LSS084	05/05/94	05/09/94	05/10/94		
2-GW-WM-1D								
TOTAL CYANIDE	007	W	94LC128	05/05/94	05/17/94	05/17/94		
TOTAL DISSOLVED SOLI	007	W	94LSS084	05/05/94	05/09/94	05/10/94		
TOTAL DISSOLVED SOLI	007 REP	₩	94LS5084	05/05/94	05/09/94	05/10/94		
AB QC:								
								
TOTAL CYANIDE	LC1 L	W	94LC125	N/A	05/16/94	05/16/94		
TOTAL CYANIDE	TC5 F	W	94LC125	N/A	05/16/94	05/16/94		
TOTAL CYANIDE TOTAL DISSOLVED SOLI	MB1 MB1	W W	94LC125 94LSS084	n/a n/a	05/16/94 05/09/94	05/16/94 05/10/94		
10112 210001125 0001				,		,,		

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/06/94

RFW LOT # :9405L493

CLIENT ID /ANALYSIS	RPW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
TOTAL DISSOLVED SOLI	MB1 BS	W	941.55084	n/A	05/09/94	05/10/94
TOTAL DISSOLVED SOLI	MB1 BSD	W	94LSS084	N/A	05/09/94	05/10/94
TOTAL CYANIDE	LC1 L	W	94LC128	n/a	05/17/94	05/17/94
TOTAL CYANIDE	LC2 L	W	94LC128	N/A	05/17/94	05/17/94
TOTAL CYANIDE	MB1	W	94LC128	N/A	05/17/94	05/17/94

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